MAR 3 1928

Medical Lib.

This Issue Exceeds 94,000 Copies

THE JOURNAL

OF THE

American Medical Association

Annual Subscription, $5.00 | PUBLISHED WEEKLY | Single Copies, 20 Cents

VOLUME 90, No. 9 | 535 North Dearborn Street, CHICAGO, ILL. | MARCH 3, 1928

CONTENTS AND SUBJECT INDEX

End-Results from the Surgical Treatment of Hyperthyroidism. Charles H. Frazier, M.D., and W. Blair Mosser, M.D., Philadelphia.....657

Earlier Diagnosis of Measles. Philip Moen Stimson, M.D., New York..660

Severe Granulocytic Aplasia of the Bone Marrow: Report of a Case Following Arsphenamine Treatment in Congenital Syphilis. Katharine Dodd, M.D., and Scott J. Wilkinson, M.D., Nashville, Tenn. 663

Retroperitoneal Lumbar (Paranephric) Abscess: Report of Two Cases Resulting from Muscle Strain. Alfred Brown, M.D., Omaha.....666

Etiology and Results of Treatment in Angioneurotic Edema and Urticaria. Frank R. Menagh, M.D., Detroit..668

Quantitative Study of Clinical Ultraviolet Sources. Herman Goodman, M.D., and William T. Anderson, Jr., Ph.D., New York.....671

Diphyllobothrium Latum (Linn., 1758), the Broad Tapeworm of Man: Experimental Studies. Teunis Vergeer, Ann Arbor, Mich. 673

Cardiac Pain in Rheumatic Fever. Homer F. Swift, M.D., and Charles H. Hitchcock, M.D., New York.....678

The Treatment of Nausea and Certain Related Circulatory Sensations: Pharmacologic Basis for the Therapy. Robert W. Keeton, M.D., and Esther S. Nelson, M.D., Chicago.....683

Hereditary Dystrophy of the Hair and Nails. A. Wilmot Jacobsen, M.D., Buffalo 686

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

Extensive Cut-Throat with Complete Laceration of Trachea and Esophagus. G. D. Scott, M.D., Sullivan, Ind...689

Bimalleolar Fractures. Barclay W. Moffat, M.D., New York.....690

Spontaneous Ruptured Uterus. J. Ogle Warfield, Jr., M.D., Washington, D. C. 691

Closure and Dressing of Wounds, Especially of the Head. Walter R. Brewster, M.D., New Orleans.....692

A New Retention Catheter and Stilet. Wilford A. H. Councill, M.D., Baltimore 693

EDITORIALS

The Science of Medicine and the Medical Sciences.....694

Glycogen in Muscle.....695

The General Practitioner and Mental Examinations 695

CURRENT COMMENT

Grapefruit as a "Patent Medicine" 696

The Health Demonstration.....696

(Subject Index on next page)

ASSOCIATION NEWS 697

Entered as Second-Class Matter, June 25, 1885, at the Postoffice at Chicago, Ill., under Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on June 14, 1918. If undeliverable, return postage is guaranteed

Copyright, 1928, by the American Medical Association. NEXT ANNUAL SESSION, MINNEAPOLIS, MINN., JUNE 11-15, 1928

S

Bulletin

"The detailed information we try so hard to give the medical student can all be obtained from books."—Wm. J. Mayo in *Journal American Medical Association.*

Ready—de Takáts' Local Anesthesia

The widened use of local anesthesia, with its refined technic, is concisely recorded in this new book by Dr. de Takáts. A large experience in this country and on the Continent has specially qualified Dr. de Takáts for this writing.

He points out the most favorable circumstances in which local anesthesia may be used; he indicates the most effective method of its administration; and he tells how to avoid the complications.

He presents the subject with a simplicity found in few books. The text gives the details; the illustrations *show how to execute them.* There are 117 of these uniquely instructive illustrations. They show the various landmarks, point out the sites of injection, illustrate the nerve distribution and the regions anesthetized.

The anesthetization of every section of the body is considered.

By Géza de Takáts, M.D., M.S., Assistant Professor of Surgery, Northwestern University Medical School. With a Foreword by Allen B. Kanavel, M.D., Professor of Surgery at Northwestern University Medical School. Octavo of 225 pages, with 117 illustrations. Cloth, $4.00 net

Another New SAUNDERS BOOK on Page 3

SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "ab," abstract; "E," Editorial; "C," Correspondence; "Ml," Medicolegal; "ME," Medical Economics.

A. M. A., Board of Trustees meeting....697
Abdomen, colossal hydatid cysts....ab-727
diagnosis, erect percussion in....ab-726
pain in left hypochondrium....713
Abscess, paranephritic ab-732
retroperitoneal lumbar (paranephric)....*666
Actinomycosis ab-721
Addison's Disease, pituitary extract in...ab-727
Adenoma, toxic, of thyroid....*657
toxic, effect of iodine in....ab-722
Alcohol, ganglion injection in neuralgia..ab-730
patients in psychiatric hospitals....708
Anemia, liver treatment....ab-731
liver feeding under salt-free diet....ab-726
pernicious, leukocytes in ab-730
Anesthesia, toxicity, charcoal to prevent..ab-731
Aneurysm, aortic, bismuth in....ab-729
Angina agranulocytotica, roentgen cure...ab-729
Anthropology, chair of, Manilowski appointed.705
Aplasia, granulocytic, of marrow....*663
Appendicitis, chronic, roentgen picture....ab-728
Appendix, aberrant ab-725
Arctic region, diseases of....713
Arsenic poisoning *664
Arsphenamine, granulocytic aplasia after...*663
Arteriosclerosis vs. vegetative system....ab-730
Arthritis, *o*-iodoxybenzoic acid in....ab-723
Association News 697
Asthma, skin reactions in....ab-730
Atropine, effect in nausea....*684
Auricular Fibrillation, quinidine sulphate in ab-720
Barbital, effect in nausea....*684
compounds, accidents due to....705
Benzene poisoning *664
Biliary Tract, absorption and disease vs. angioneurotic edema and urticaria....*668
Bilirubin calcium pigment and gallstones.ab-721
Birth Control, marriages wrecked by....705
Bismuth in aortic aneurysm....ab-729
Bladder, foreign body in....ab-727
drainage, retention catheter and stilet...*693
inflammation from catheter....ab-723
Blepharitis from herpes virus....ab-724
Blood, carotinemia ab-720
circulation vs. sodium nitrite....ab-731
coagulation in disease....ab-728
group determination and paternity....ab-729
group determination, technic....ab-730
groups and disease....ab-729
hypercholesteremia vs. arteriosclerosis.ab-730
supply, saline wheal test....ab-721
transfusion, fasting donors for....ab-721
transfusion for general sepsis....ab-722
Body fluids, iodine starch test....ab-722
Bone diseases, wrong diagnosis....ab-731
Bone Marrow, severe granulocytic aplasia.*663
Book Notices 716
Books Received 717
Brain of Lenin....708
Bromide treatment of nausea....*683
Bureau of Investigation....710
Calcium ion concentration in pregnancy..ab-730
metabolism, parathyroid function, etc...ab-727
Cancer, pigmented, with metastases....ab-726
mortality and social conditions....704
research, international convention on, announced 705
Catheter cystitis ab-723
retention *693
Cathode Rays, therapeutic use....ab-731
Cholesterol vs. gallstone formation....ab-732
Colics, severe, oil-ether enemas in....ab-729
Colitis, chronic ulcerative....ab-722
Commonwealth Fund health demonstration.E-696
Correspondence 712
Dagron, Dr., death....706
Danysz, Dr., death....706
Deaths 709
Dental clinics, school, Italy....707
Diabetes and bile duct disease....ab-720
fat-poor diet for ab-730
in infant ab-725
iodine starch test in....ab-722
nostrum, grapefruit as....E-696
treatment, Pancrepatine 714
Diet, low residue ab-722
Diphtheria immunity and Schick test...ab-727
Disease and blood groups....ab-729
blood coagulation in....ab-728
of arctic region....713
serum intravenously ab-725
Diverticulum, pulsion ab-722
Dystrophy, hereditary, of hair and nails..*686
Eclampsia, calcium ion concentration in..ab-730
Edema, angioneurotic *668
Endocarditis with Brucella melitensis bacteremia ab-720
Enemas, oil-ether, as sedatives....ab-729
Epididymitis, vasoligation to prevent....ab-725
Epilepsia tarda ab-721
Esophagus tuberculosis, fatal....ab-728
complete laceration in cut throat....*689
enlarged, and pulsion diverticulum....ab-722
Ether oil enemas as sedatives....ab-729
Extremities, saline wheal test of arterial disorders ab-721
Fish, source of tapeworm *673
Foreign Letters 704
Fractures, bimalleolar *690
Gallbladder calculi, internal treatment...ab-729
calculi and bilirubin calcium pigment.ab-721
calculi formation vs. cholesterol....ab-732
disease, iodine starch test in....ab-722
Genitals, experimental tuberculosis....ab-729
Glycogen in muscle....E-695
Gonorrhea, acriflavine for....ab-725
rectal prostatic massage instrument....715
Granite cutters, tuberculosis in....C-713
Grapefruit as a "patent medicine"....E-696
Growth, incomplete masculine....714
Hair, hereditary dystrophy....*686
Hay-fever, skin reactions in....ab-732
Head wounds, closure and dressing....*692
Health demonstration, Commonwealth Fund E-696
education, central council for....704
education, handbook of suggestions on....704
Heart in mushroom poisoning....ab-724
ball thrombus in left auricle....ab-720
pain, in rheumatic fever....*678
rhythm, gallop ab-721
Hemorrhagic diseases ab-720
Herpes virus, blepharitis from....ab-724
Holmes, Oliver Wendell, in Hall of Fame.C-712
Hydrocephalus after mumps....ab-728
Hyperthyroidism, surgical treatment....*657
Industrial occupation vs. cancer mortality....704
Infections, acute, dye therapy....ab-726
transfusion and dye therapy....ab-722
Injections, intravenous, principles....ab-725
intravenous, of serum....ab-725
Insurance, health, total disability defined.Ml-718
Intestines absorption, low residue diet...ab-722
hemorrhage from thrombosis....ab-729
obstruction in infant....ab-727
rupture, traumatic subcutaneous....ab-728
Iodine starch test of body fluids....ab-722
Joints diseases, wrong diagnosis....ab-731
Koplik's Spots in measles....*660
Lenin, brain of....708
Leukemia, etiology ab-726
Leukocytes in pernicious anemia....ab-730
Licensure, examinations, Italy....707
Liver treatment, priority ab-731
feeding under salt-free diet in anemia..ab-726
glycogen vs. muscle glycogen....E-695
Lungs, disease, wrong diagnosis....ab-731
mycosis simulating tuberculosis....ab-729
Lupus vulgaris, potassium-phenol....ab-726
Lymph Nodes tuberculosis....ab-728
Lymphogranuloma inguinale with rheumatic symptoms ab-730
Malleolus, fractures *690
Manilowski at University of London....705
Marble dust, tuberculosis from?....C-713
Marriages 709
Masculine development, incomplete....714
Mastoiditis in infants....ab-722
Measles, diagnosis, earlier....*660
Medical Education, Registration....715
Medicine, science of, and medical sciences.E-694
Medicolegal 718
Meetings, Coming Meetings....719
Meningitis, meningococcic, treatment....ab-723
Mental Disease, Prussian law on treatment..707
Mental Tests and general practitioner....E-695
Michel clips in closing wounds....*692
Milk, human, acidified and powdered....ab-731
Mouth cancer vs. social conditions....704
Muscle strain, abscess from....*666
glycogen in E-695
Mushroom poisoning, heart in....ab-724
Nails, hereditary dystrophy....*686
Nausea, treatment *683
Neoarsphenamine poisoning *664
Nephritis, intradermal salt solution test in.ab-722
Neuralgia, trigeminal, ganglion injection of alcohol in ab-730
News 697
Novasurol poisoning *664
Obesity, dextrose candy treatment....ab-720
Olfactometer 706
Otorhinolaryngology, Congress of....706
Ovary papilloma 715
Pancrepatine 714
Paraldehyde, effect in nausea....*684
Paralysis, bilateral deltoid, Chatfield-Girdlestone splint for....C-713
Parathyroid function and pulmonary tuberculosis ab-727
insufficiency, parathyroid hormone in....714
Parotitis, hydrocephalus after....ab-728
Patein, Dr., death....706
Paternity and blood group determination.ab-729
Peptic Ulcer, gastric plus duodenal....ab-729
Percussion, erect, in abdominal diagnosis.ab-726
Pharmaceutic studies, changes in, Italy....707
Phenol as Wassermann antigen....ab-728
potassium mixture for lupus vulgaris...ab-726
Physician-novelist awarded prize....705
general practitioner and mental tests...E-695
Pituitary Extract in Addison's disease....ab-727
Poliomyelitis, to prevent crippling in....ab-730
Pollen, antigenic action of....ab-732
Pregnancy, calcium ion concentration in..ab-730
abdominal, spontaneous ruptured uterus..*691
extrauterine, diagnosis ab-732
Prostate massage, rectal, instrument for....715
Prostatectomy, mortality ab-727
Prostitutes, syphilis serodiagnosis in....706
Protein, allergy, in angioneurotic edema and urticaria *668
Purpura, hemorrhagic ab-720
Queries and Minor Notes....713
Rheumatic Fever, Birkhaug test in....ab-724
cardiac pain in *678
Rib, cervical ab-722
Saline wheal test ab-721
Salpingo-ovaritis, physical therapy....ab-728
Scarlet Fever, serum therapy....ab-729
streptococci, specificity ab-724
Sciatica, physiotherapy ab-728
Sella Turcica, posterior clinoids fracture...C-712
Skin cancer vs. social conditions....704
Smallpox in Australia....714
vaccine, subcutaneous inoculation....ab-731
Smell, physiology and pathology....706
Society Proceedings 719
Sodium nitrite effect on circulation....ab-731
Spine, fractures ab-723
Splint, Chatfield-Girdlestone C-713
State Board Examination....715
Sterility in male, diagnosis....ab-724
Stilet, new retention....*693
Stomach hemorrhage from thrombosis....ab729
cancer vs. social conditions....704
Stone cutters, tuberculosis in....C-713
Strabismus in congenital syphilis....C-712
Sulpharsphenamine poisoning *664
Syphilis, congenital, strabismus in....C-712
complement fixation vs. precipitation tests ab-725
congenital, severe granulocytic aplasia in.*663
serodiagnosis, in prostitutes....706
Tapeworm, Diphyllobothrium latum....*673
Throat, extensive cut throat....*689
cancer vs. social conditions....704
Thrombosis, ball, in left auricle....ab-720
venous, hemorrhages from....ab-729
Thyroid, toxic adenoma *657, ab-722
treatment of hair and nails dystrophy....*686
Tonics and Sedatives....Adv. page 24
Trachea, complete laceration in cut throat..*689
Tryparsamide poisoning *664
Tubercle Bacilli, living, intracutaneous inoculation ab-729
Tuberculosis, gas metabolism research for..ab-730
immunization, B C G....ab-731
in marble cutter C-713
juvenile ab-723
Tuberculosis, Pulmonary, tuberculin in..ab-727
calcium metabolism and parathyroid....ab-727
false, from mycosis....ab-729
Typhoid inoculation, protective....ab-731
serotherapy 705
Ultraviolet Rays, sources....*671
Urticaria, angioneurotic *668
Uterus, ruptured, spontaneous....*691
Vagina cancer, primary....ab-732
cancer, radiotherapy ab-732
tampon, gauze roll for....ab-728
Vertigo, treatment *683
Vital Statistics, Jews affected by falling birth rate 704
juvenile morbidity and mortality....707
Wassermann test antigen, phenol as....ab-728
Water, chlorinated, testing quality....708
Workmen's Compensation Acts, cerebral hemorrhage Ml-718
medical services authorized by agent..Ml-719
operation, refusal to undergo....Ml-718
Wounds, closure and dressing....*692

BOOK BUYING SIMPLIFIED

We supply new and standard medical works of all publishers
ONE ORDER—ONE REMITTANCE
GET OUR LATEST BULLETIN
CHICAGO MEDICAL BOOK CO. 435 S. Honore St. CHICAGO

Thousands of doctors have found
X-ACTO is a BETTER *Syringe*
even though they do cost less.

Sterilization Proof Glass
Permanent Scale
Perfect Needle Tip
No Backflow

Ask your dealer or write to
S. DONIGER & COMPANY
23 E. 21st Street, N. Y.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 90, No. 9 CHICAGO, ILLINOIS MARCH 3, 1928

END-RESULTS FROM THE SURGICAL TREATMENT OF HYPERTHYROIDISM *

CHARLES H. FRAZIER, M.D.
AND
W. BLAIR MOSSER, M.D.
PHILADELPHIA

Careful preoperative preparation, fractional operations and perfection of operative technic in the surgical treatment of hyperthyroidism have so minimized the operative risk that consideration of mortality statistics no longer holds any significance. The occasional death is usually an unavoidable circumstance encountered by the surgeon in endeavoring to save a patient who has been "carried along" by ill advised conservation until he has passed the stage of operability—a statement justified when it is remembered that every patient with hyperthyroidism has been at one stage of the disease a perfectly safe operative risk. Mortalities, therefore, are due not to the operation but to the lack of operation. The time has arrived when attention should be focused on the morbidity statistics of "goiter surgery." What are the end-results of the surgical treatment of hyperthyroidism? Does operation offer a sufficient guarantee of cure, increase of life expectancy, and relief of disabling symptoms to justify its routine application as the method of choice in the treatment of toxic goiter? Every surgeon who deals with the goiter problem has, from personal observation, become convinced of the gratifying results usually obtained, but it is surprising how little is actually known of the end-results. It was to determine with some degree of accuracy the postoperative status and degree of rehabilitation to be expected that the present study was made.

While recognizing that the residual effects of hyperthyroidism are fundamentally the same, whether produced by the hyperplastic toxic (exophthalmic) goiter or the toxic adenoma, it has seemed most convenient for the present study to consider them separately. Especially is this factor of importance when one is considering the end-results as compared with the duration of the disease or the age of the patient. The present study is based on a recent series of 146 cases which have been thoroughly followed. This group is composed of 100 hyperplastic toxic cases and forty-six toxic adenomas.

INCIDENCE

In the hyperplastic toxic group the incidence of males to females was 1:4; the average age was 36 years (the youngest being 16 and the oldest 60 years), and the average duration of symptoms was sixteen months.

In the toxic adenoma group the sex incidence was 1:15; the average age was 43 years (the youngest being 21 years and the oldest 67 years); the average duration of the goiter was fourteen and one-half years, and the average duration of toxic symptoms was twenty months.

Some of these figures deserve attention. In the first place, the average age of onset in the hyperplastic toxic group is, at least in this community, about a decade later than is usually recognized. The average age of toxic symptoms, 16 months in the hyperplastic toxic group and 20 months in the adenomatous group, furnishes a concrete demonstration of the delay that usually occurs before the patient is sent to the surgeon. This delay, which is now twice as long as was observed five years ago, has no doubt been produced by a confused conception of the value of iodine medication. In a recent publication, we have predicted that this factor will probably tend to increase the operative mortality during the next few years. We will try to show in the present paper that it likewise directly influences the final operative result; i. e., that there is a directly proportional relation between the duration of the disease and the degree of rehabilitation.

OPERATION

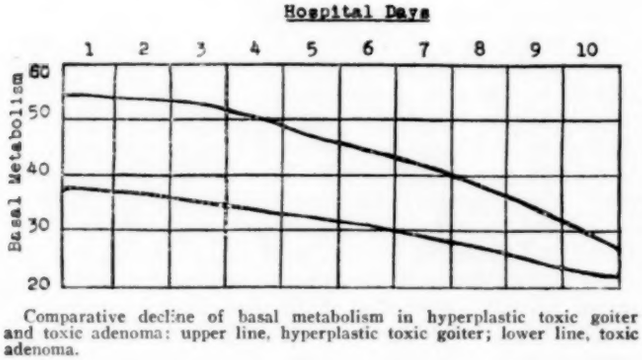
Of course, the type of operation must have as its ultimate purpose removal of as much of the diseased gland as possible, just enough thyroid tissue being left to satisfy the normal requirements of the patient; i. e., a subtotal thyroidectomy. To reach this point, however, it is often necessary, because of the operative hazard, to divide the operation into two or more stages. A few years ago, preoperative iodine medication so improved the toxic patient that many of the multiple stage procedures were discarded. Now, however, indiscriminate and prolonged medication by the practitioner has to a large extent deprived the surgeon of this safeguard, and we have again been forced to operate in an increasing number of cases by the fractional method. It is to be hoped that the practitioner will soon become convinced, not only of the uselessness of iodine as a form of medical treatment of hyperthyroidism, but also of the ultimate harmful influence it will produce. We have failed to see in this clinic a single case of hyperthyroidism in which permanent benefit resulted from the administration of iodine.

As a preoperative adjunct, iodine is a most useful agent both in the hyperplastic toxic and in the toxic adenoma, the only difference noted being one of degree. In the hyperplastic cases, the average fall of basal metabolism during the preoperative interval has been 50 per cent, while in the toxic adenoma it has been

* From the Thyroid Clinic of the University Hospital.

40 per cent, as shown in the accompanying chart. This slight variation may be explained by the more complete nervous relaxation of the exophthalmic patient. It is realized that this response to iodine in the toxic adenoma is at variance with that reported by many observers in the Middle West. The only explanation we can offer is that there may be some difference in the pathologic physiology of the toxic adenoma in various regions. Certain it is that the effect observed in this clinic has been of the same nature in the two types of hyperthyroidism.

Of the patients studied, 81.3 per cent were operated on in one stage; 16 per cent in two stages, and 2.7 per cent in three stages. Preliminary ligation except as a "trial operation" has been practically discarded. The two stage operation, consisting of the removal of one lobe followed by the removal of the opposite lobe after an interval of eight weeks, has proved so satisfactory both in the reduction of immediate severe reaction and in the ultimate recovery that we are using it with increasing frequency. A statement in the recent literature by a prominent surgeon that he has "never deliberately planned multiple operations" requires no comment, as in the same article he admits not having had any experience with them.



Comparative decline of basal metabolism in hyperplastic toxic goiter and toxic adenoma: upper line, hyperplastic toxic goiter; lower line, toxic adenoma.

END-RESULTS

In this clinic it is our practice to follow all patients who have been operated on for at least five years. As far as possible this is done by personal examination, although patients who live at a considerable distance from the clinic are seen less often than those near at hand, letters or examination by the family physicians being substituted. In a general way, we have attempted to examine or receive a detailed report from every patient four times during the first year (at one month, three month, six month and twelve month intervals), twice during the second year and once each year thereafter. Basal metabolic estimations are made at frequent intervals; and, whenever any doubt exists concerning the patient's rating, this estimation is always made before classifying the patient.

Bearing in mind that the final result of any form of therapeutics must be judged according to the anatomic, symptomatic and economic status of the patient, we have classified the cases as follows:

Group 1. Patients who are entirely well.

Group 2. Patients in whom certain symptoms persist, such as residual nervous symptoms, palpitation, inaptitude and exophthalmos, but who are entirely relieved of all traces of hyperthyroidism and who carry on their usual affairs of life as well as they did before hyperthyroidism developed. Of course, the basal rate of this group must be normal.

Group 3. Patients who are entirely relieved of their hyperthyroidism but who are seriously handicapped by certain visceral changes produced by the disease. This, of course, includes the "thyrocardiacs," and the malnourished and prematurely senile groups.

Group 4. Patients in whom the symptoms of hyperthyroidism were unrelieved by operation—those with so-called continuous hyperthyroidism.

Group 5. Patients who were apparently well for some time following operation but who now have a definite recurrence.

TABLE 1.—*End-Results in Hyperplastic Toxic Cases*

	Patients	
	Number	Per Cent
Group 1	71	71
Group 2	19	19
Group 3	6	6
Group 4	1	1
Group 5	4	4

TABLE 2.—*End-Results in Toxic Adenoma*

	Patients	
	Number	Per Cent
Group 1	39	87
Group 2	4	8.7
Group 3	2	4.3
Group 4	0	0
Group 5	0	0

It is obvious that the cases falling into the first three groups are operative successes, while those in the last two groups have been operative failures.

The present status of the hyperplastic toxic cases is shown in table 1; that of the cases of toxic adenoma in table 2. These ratings are based on an average postoperative interval of ten months. The rating of both types is shown in table 3. A recapitulation of the final rating of both types is shown in table 4, in which all patients in groups 1, 2 and 3, i. e., those relieved of hyperthyroidism, are considered as operative successes, while those in groups 4 and 5 are considered as operative failures.

A detailed study of the patients in each group is of interest. As has been previously stated, all those in group 1 are considered entirely well. They have been completely restored to their usual health, are engaged in their usual occupations, and, when examined, fail to show any residual effects of the disease. In fact, many patients who, before operation, were considered to have permanent visceral injury have entirely recovered and have entered group 1. This group contains 75 per cent of the cases.

TABLE 3.—*End-Results in All Types*

	Patients	
	Number	Per Cent
Group 1	110	75.3
Group 2	23	15.8
Group 3	8	5.5
Group 4	1	.7
Group 5	4	2.7

TABLE 4.—*End-Results*

	Patients	
	Number	Per Cent
1. Operative success: relieved of hyperthyroidism	141	96.6
2. Operative failures: recurrence or continuous hyperthyroidism	5	3.4

Group 2, comprising patients with mild residual symptoms, contains twenty-three patients, or 15.8 per cent of the entire number. In view of the general systemic effect of the disease, it seems only natural that

certain systems of the body will not completely readjust themselves after removal of the cause, and it is of course probable that certain as yet unexplained organic changes have occurred in these patients that make complete restoration impossible. This, however, cannot be construed as an argument against operation, any more than abdominal adhesions can be an argument against operative intervention in suppurative appendicitis, or residual gastritis can contraindicate the removal of an offending gallbladder. In the present series, the number in this group has been augmented to some extent by a few patients who are receiving a permanent disability allowance from the United States Veterans' Bureau. It has been our experience that these patients will seldom admit that they have been entirely cured from any malady.

Group 3 contains those patients who have been relieved of the hyperthyroidism but who are definitely and permanently handicapped. It contains eight patients who, before operation, have shown signs of marked visceral injury, and includes those with organic cardiac damage. The disability in six of these patients is due to cardiac injury; postoperative hypothyroidism is responsible for disability in one and mild tetany in another. In the latter patient, parathyroid injury was unavoidable. She was an extremely bad operative risk, and was subjected to a total thyroidectomy with the knowledge that continuous postoperative glandular therapy would be necessary. Relief of hyperthyroidism in this group and the arrest of visceral degeneration constitute a satisfactory result. Rehabilitation is not expected. In every case, however, considerable improvement has occurred, and, as a matter of fact, we have never seen a patient when relieved of hyperthyroidism, regardless of the stage of the disease, whose general condition has not been improved. As previously mentioned, patients in this apparently permanently handicapped group often improve to such an extent that they finally enter groups 2 or 1.

Groups 4 and 5 comprise the patients with definite recurrences. They are listed as operative failures, although it is known that reoperation removes them from this group. However, as far as the initial therapeutic procedure is concerned, they have not been cured and are so listed. To state that operative failure does not occur is either a deliberate avoidance of the evidence or a confession that the patients were not followed. We have seen and operated again on patients who were originally operated on in many other goiter clinics, and surgeons in other clinics have no doubt reoperated in some of our cases. The present series includes five cases (3.4 per cent) in which there have been definite recurrences.

It is beyond the scope of this article to advance definite reasons or theories to account for recurrence. Failure to remove enough of the diseased gland is the obvious cause and is, no doubt, responsible in most instances. This factor certainly accounts for continuous hyperthyroidism; but there are many cases in which a considerable interval of time, from six months to a year or more, elapses before there is a recurrence. In these cases one is forced to consider other factors, chief among which is that the underlying cause of the original hyperplasia may have recurred, with a resulting secondary hyperthyroidism. Since, however, so little is known concerning the real cause of hyperthyroidism, it is useless to attempt conclusions, the premises of which are uncertain. The treatment for recurrence is, of course, reoperation.

To return again to the final rating (table 3), it is seen that a considerable number of patients relieved of hyperthyroidism are not entirely well (groups 2 and 3). Can anything be done to reduce this number? From our observations we have always noted that better results are obtained in the financially comfortable patients than in those of the poorer classes, because of the fact that they are better situated to carry out a rational plan of convalescence. A rest period of at least one month and preferably three months is always advised as a postoperative routine. During the past year, an attempt has been made to extend this plan to include every patient. An experienced social service worker has been added to the personnel of the clinic. The social status of all patients is investigated. They are advised in detail concerning their convalescence and, when home surroundings do not permit of adequate care, the patients are placed in convalescent homes, where they are under the direct care of the social service department. It is too early to evaluate the result of this procedure, but if the number of patients in groups 2 and 3 (21 per cent) can be reduced it will be considered successful.

Does the duration of hyperthyroidism have any effect on the operative result? All observers must agree that it does, and the series of cases here presented confirm this observation. The average duration of thyrotoxicosis in the patients in group 1 was sixteen months and that of the patients in groups 2 and 3, twenty months. On the other hand, permanent disability has not occurred in any patient in whom the duration of the disease was three months or less.

When all the facts concerning hyperthyroidism are considered—the natural course of the disease, the imminent danger of incurring permanent visceral injury, the absolute lack of any specific or nonspecific medical measures that can be relied on to alter its course, the low mortality from operation and the ultimate operative result to be expected—it is almost inconceivable that a large proportion of the medical profession continue to follow a plan of procrastination that denies prompt treatment to patients suffering from hyperthyroidism.

CONCLUSIONS

1. Operative treatment of hyperthyroidism offers a chance for recovery from thyrotoxicosis in about 96 per cent of cases.
2. Complete restitution can be expected in 75 per cent of cases.
3. About 15 per cent will have mild residual symptoms.
4. About 5 per cent will be permanently handicapped.
5. About 3 or 4 per cent will have recurrences.
6. The degree of disability is proportional to the duration of the disease.
7. Early operation will prevent the occurrence of permanent disability.

133 South Thirty-Sixth Street.

Study of Anatomy and Physiology.—Since little could be known about abnormalities in structure and function until more was known about the normal state, it was only natural that physicians should have been led into the study of anatomy and physiology. It cannot be maintained that this knowledge was pursued solely for the sake of curing disease, but the pursuit of this knowledge originated in, and was practically confined to, the medical schools, and the search was almost exclusively conducted by physicians.—Cole, Rufus: *Science* **67**:48 (Jan. 20) 1928.

THE EARLIER DIAGNOSIS OF MEASLES *

PHILIP MOEN STIMSON, M.D.
NEW YORK

The importance of making an early diagnosis in a case of measles is well known. It is generally understood that measles is most contagious in its early stages, and therefore that early diagnosis and isolation are necessary to hold down the spread of the disease. But it is not so well known that measles may often be predicted with some confidence before the appearance of Koplik spots, the first pathognomonic sign; that measles is usually highly contagious from one to two days before the appearance of Koplik spots, and that the course and particularly the complications of measles are apt to be milder if the patient is put to bed and individually isolated at the very onset of the fever. Furthermore, New York City for the past ten or twelve years has had biennial waves of measles (fig. 1). From three to six times as many cases have occurred on alternate years as during the intervening winters. Last winter was an unusually light season for measles. This winter accordingly promises to be a heavy one with possibly ten times as many cases as last year. As there is no pathognomonic cellular reaction in measles, or histopathologic means of diagnosis, at any time in the disease, one must rely on clinical evidence only for diagnosis. It would therefore seem advisable once again to emphasize the familiar details in the early clinical diagnosis of measles, and also, if possible, to suggest new or less well known features, the finding of which might further still earlier recognition of the presence of the disease.

The symptoms of measles are quite variable in their duration, severity and time relationship. However, many cases run exactly true to a type, and many more run nearly so. Four stages of the disease are usually recognized, not separated by any sharp line of demarcation, but gradually merging. These are: (1) the

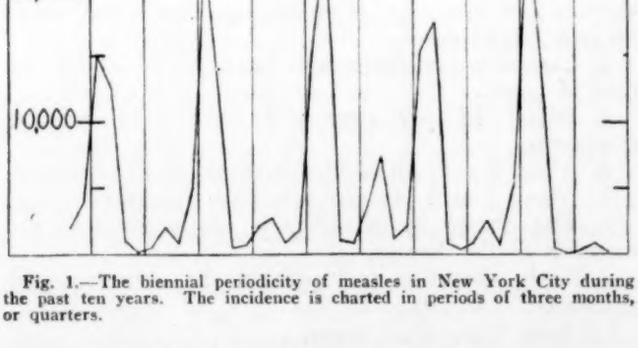


Fig. 1.—The biennial periodicity of measles in New York City during the past ten years. The incidence is charted in periods of three months, or quarters.

period of incubation with duration of from seven to fourteen days; (2) the period of invasion, or prodromal stage of catarrh, lasting from three to four days; (3) the period of eruption, or fastigium, lasting from three to five days, and (4) the period of convalescence with desquamation, lasting about a week. As this paper has to do only with the early diagnosis, the discussion will not go beyond the first two periods into the stage of the eruption, or fastigium.

From exposure to the onset of the first symptom of the disease—usually fever—is the period of incubation. This averages fairly close to ten days, with only rare cases falling outside the seven to fourteen day or second week limit. The duration varies with the virulence of the organism and the resistance of the patient, the more severe cases usually showing the shorter incubation periods.

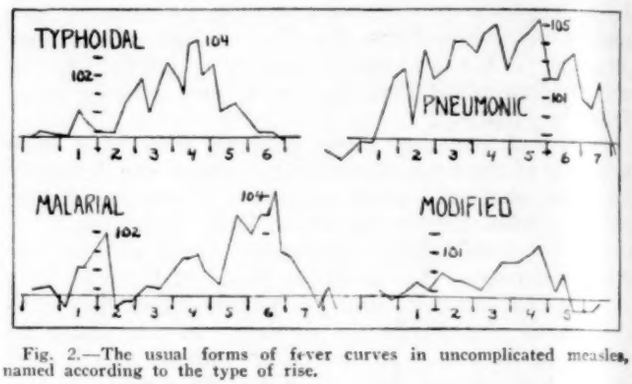


Fig. 2.—The usual forms of fever curves in uncomplicated measles, named according to the type of rise.

This period of incubation is customarily without any appreciable symptoms of ill health, but during the last half of this period there may be found a temporary loss of weight, averaging from 5 to 6 ounces (140 to 170 Gm.) and usually less in the mild or modified cases. The blood may early show a slight leukocytosis lasting to the middle of the period of incubation, and followed by a more definite lymphocytic leukopenia toward the end of this period.

The second stage, the period of invasion or of catarrh, is from the onset of the first evidence of ill health, usually fever, to the onset of the exanthem, or rash in the skin, and lasts usually from three to four days, with only very exceptional cases outside a one to seven day limit. If the patient is under observation during this stage, a diagnosis of measles should be made or suspected almost without exception, and suitable treatment instituted.

Fever, in the great majority of cases, is the first evidence of ill health (fig. 2). It usually falls into one of four more or less distinct types: (*a*) Usually there is the typhoid type of rise, the temperature rising in from four to five days by daily increase to a maximum of nearly 104 F. at the time of the full bloom of the rash. (*b*) In the malarial type of rise there is a day or two of more or less fever with a return to normal or nearly normal for a few hours and then a quick rise in two or three days to the maximum with the eruption. (*c*) In the severe cases the fever is apt to rise quickly at the start to 103 F. or more and hover around 104 until the rash has well appeared. This may be called the pneumonic type. (*d*) The fourth type is found in mild or so-called modified cases, as in infants of 4 or 5 months possessing still some inherited immunity albeit not much, or in children who have been given the blood of convalescent patients in doses insufficient to afford complete protection but enough to mitigate the symptoms of the disease. Here the fever may not go over 101 or 102 and is gradual in rise and fall.

No matter what the type of rise of fever, the fall is usually by crisis or rapid lysis, the temperature dropping to normal very quickly, once the rash is well out.

* From the Department of Pediatrics of Cornell University Medical College.
* Read before the Pediatrics Section of the New York Academy of Medicine, Nov. 10, 1927.

Should the fever fail to clear up in this manner and at this time, the presence of some complication, particularly a secondary infection, should be presupposed, and its situation looked for.

Following the onset of fever, a slight puffiness of the lower eyelids may be noticeable, and there may also be found a fairly definite line of congestion across each lower lid, about at the margin of the tarsal cartilage and perhaps a third of the way from the lid margin to the fornix (fig. 4). In ten children in whom I have observed what I thought was a typical measles line of this sort in the eye and have prognosticated the disease at this stage, it subsequently became manifest in eight. In six of the ten, five successes and one failure, I was aided by a history of previous exposure to the disease. But in three of the four cases in which such a history was lacking, the guess of the presence of measles proved to be correct. This so-called measles line must be quite marked to be suggestive. Children ill with other catarrhal conditions may show a linear conjunctivitis just inside the blepharal margin of the lower lid; and, furthermore, too forceful retraction of a normal lower lid may cause blanching in such a manner

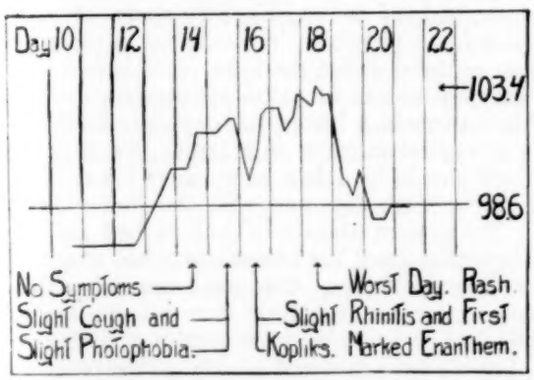


Fig. 3.—Temperature in measles in a girl, aged 14 years, illustrating the priority of fever as a symptom. On the first day, brother suffered from malaise and on the fourth day showed a rash.

as to leave a linear ridge of redness at the tarsal margin. The measles line is best seen for the first time in a child in whose case there is a history of a known exposure to the disease some ten days before the day of examination and who has that day or the day before shown the first slight elevation of temperature above normal. Its duration as a line is quite brief as a rule, the injection spreading in a day or so to involve the entire peripheral conjunctiva and later the palpebral conjunctiva also. But in one patient, an 11 year old boy, this line and fever were the only features for two days before the other symptoms of measles became manifest.

When this line has been obscured by the more general conjunctivitis, puffiness of the lids becomes marked and there is usually a seropurulent exudation with considerable photophobia. The caruncle at the inner corner of the eye becomes swollen, and occasionally there can be found thereon two or three tiny elevated bluish white spots, possibly similar in nature to the buccal spots, popularized by Koplik.

Occasionally there may be found, particularly on the chest and neck, a prodromal eruption occurring during the first day or two of the fever. This rash (fig. 6) may consist of fine macules somewhat resembling the rose spots of typhoid, or it may be a blotchy erythema, or it may resemble quite closely the diffuse erythema of scarlet fever. The eruption usually is very short lived, disappearing before the onset of the typical exanthem of measles. It is of importance, however, in obscuring an early diagnosis. In one patient, a young clinic secretary, it took the form of a diffuse erythema across the neck and shoulders and, with fever and headache, comprised the essential features of the day of onset. This rash was gone the third day, when Koplik's spots appeared, making the diagnosis certain. The measles line in the eyes was not looked for.

Fig. 4.—The so-called measles line, a new sign believed not previously described, and appearing usually shortly after the onset of fever.

Usually about the second day of fever, the enanthem appears on the soft palate, the uvula, the tonsils or the posterior pharyngeal wall. It begins as a slight injection, together with a number of scattered reddish brown spots possibly the size of a pinhead. The congestion becomes more marked and the spots themselves become more numerous and possibly confluent, so that by the fourth or fifth day the pharynx may be markedly congested and irregularly brownish red. Numerous tiny opalescent miliary vesicles may be seen when there is considerable involvement of the pharynx. This enanthem usually lasts until the eruption on the skin is well marked, and it fades as the fever in uncomplicated cases returns to normal. Profuse involvement of the pharynx may be accompanied by pain, especially on swallowing.

There next appear in the average case the clinical manifestations of catarrh; to wit, coryza and cough, sometimes called with conjunctivitis the three C's. These are due to the involvement of the mucous membranes of the eyes, nose, larynx, trachea and bronchi in the pathologic processes of measles.

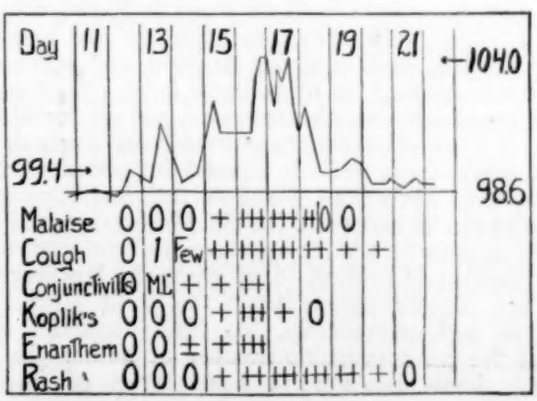


Fig. 5.—Observations in a girl, aged 8 years, illustrating the priority of fever as a symptom, and the relative time of appearance of the measles line (M. L.). On the third day, sister had cough, and next day a rash.

The nasal catarrh is usually shown by premonitory sneezing followed by the usual manifestations of profuse coryza or rhinitis. The cough of measles is a frequent nonproductive, irritating cough due to the inflammation of the mucous membrane of the larynx and trachea. In fact, a certain amount of bronchitis is to be considered part of any case of measles rather than a complication.

These manifestations of catarrh, coryza, cough and conjunctivitis usually reach maximum severity about the end of the period of invasion when the fever is at its height and the exanthem is beginning to appear. They then usually clear up even more rapidly than they appear, with the exception of the cough, which is apt to persist into convalescence.

Koplik's spots comprise the first pathognomonic sign of measles. When marked, these spots resemble grains of white pepper loosely sprinkled on a red background. They first appear, usually on the second or third day

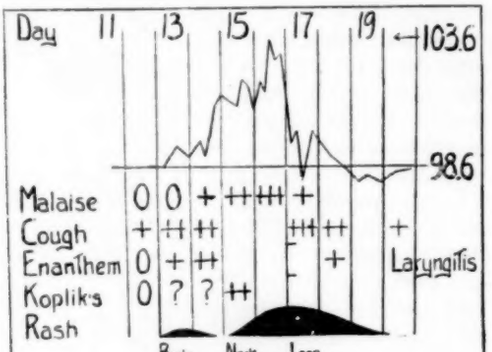


Fig. 6.—Observations in a woman, aged 36, illustrating nonconformity in an adult to the rule of priority of fever; also a prodromal rash. This patient was the mother of the patient recorded in figure 5. On the third day, daughter had cough, and next day a rash.

of the disease, as small red patches in the center of which is a tiny opalescent whitish speck, much smaller than a pinhead. They are usually first found in the mucous membrane on the inside of the cheek about opposite the first molar teeth, but as they become more numerous they may be found all over the inside of the cheeks and in marked cases on the mucous membranes of the gums and lips. They have also been reported in nasal and vaginal mucous membranes as well as on the inner caruncle of the eye. When marked, they are usually seen in any light, and the patient may speak of the mucous membrane of the cheek as feeling rough to the tongue. When few or fading or just appearing they are best seen in strong daylight, and occasionally cannot be seen at all by artificial light. They usually disappear as the exanthem appears, and are found when looked for in about 90 per cent of cases of measles.

Koplik's spots are of especial importance because when they have been found a definite diagnosis of measles can be made and the child isolated possibly two or three days before the appearance of the rash makes the disease self evident. Unfortunately, however, they do not usually appear until the child already has catarrh and, accordingly, has been markedly contagious for an appreciable number of hours. In fact, it has been shown in a large series of instances that children coming down with measles were about equally dangerous to their school classmates on each of the last three days before the rash appeared in the skin. The day of the appearance of the exanthem or rash should therefore be considered at least the fourth day of the case of measles, and exposure to others should be dated from the third day prior thereto.

Throughout the period of invasion, the patient is apt to suffer also from a good deal of diffuse headache and general malaise, and perhaps drowsiness. The spleen may be palpably enlarged until the rash is well out.

In general, the features (fig. 7) of this period of onset may be readily enumerated chronologically by associating them with the fingers of the outspread hand. Beginning with the little finger is the first symptom, fever. Twelve hours later comes the ring finger, or puffiness of the lower eyelid and perhaps the measles line, together with the first sign of the enanthem or rash on the fauces. Twelve hours later, or middle finger, come the evidences of catarrh, also known as the three C's; to wit, conjunctivitis, coryza and cough. Twelve hours later, or the forefinger, are found Koplik's spots. Thirty-six hours later, or as far from the forefinger to the thumb as it is from the little finger to the forefinger, comes the rash or exanthem, and for the palm we have a certain amount of headache and a considerable malaise throughout this period.

In making an early diagnosis of measles, therefore, one has to differentiate it from a common head cold or the slightly more severe condition usually known as grip. The first thing to do is to think of the possibility of measles and then to search for suggestive features, such as fever, the involvement of the eyes, particularly this so-called measles line inside the lower lid, the macular eruption on the mucous membranes of the pharynx, and, of course, Koplik's spots. It should be habitual for a physician in examining a patient with a cold to examine inside the lower eyelids and inside the cheeks, even before he examines the pharynx.

When there is a history of exposure to the disease, as in a hospital ward, or in a family, the patient's temperature should be taken every four hours, beginning with the seventh day, and with the first indication of fever the patient should be put to bed and isolated, and kept thus until the temperature has remained normal at least two days. One must remember that occasionally, after the first little flare up, the temperature in measles may return to normal for a day or even two, but it rises again and rapidly as the other features of the disease become more marked.

Finally, I would make a plea for the individual isolation of every person with measles. Measles, by itself, very rarely kills or cripples. It is the complications which are due to secondary infections that cause the deaths in almost every instance. And these secondary infections at times seem almost as contagious as is the primary measles. In measles, the respiratory mucous membranes are already inflamed and unusually susceptible to new invasion. Instances could be quoted almost without number of otitis media and bronchopneumonia, spreading in a measles ward or through a group of patients with measles in a family. On the other hand, with the adoption of individual isolation of all patients at Willard Parker Hospital, the incidence of secondary infection in measles has dropped very markedly, and with this drop has come a notable fall in the mortality rate of measles in the hospital. The first steps toward individual isolation of the patients with measles in the

Fig. 7.—The sequence of events during the period of invasion of measles.

Willard Parker Hospital were taken in 1923 to prevent a repetition of the crowding of 1922, when New York City experienced the heaviest measles year of the twentieth century. Actual aseptic technic was not completely installed until just before the onset of 1926, the second heaviest measles year of the century. Had the hospital death rate in 1926 maintained the same ratio to the city death rate that it did in 1922, sixty-seven more children would have died in the hospital in 1926 than actually did die. They were saved by individual isolation from one another. And similarly, in the first nine months of 1927, twenty-four more children, or an additional 10 per cent of the hospital's comparatively small number of patients with measles, would have died had it not been for aseptic technic and the resultant protection from secondary invaders. Hence, in homes as well as in hospitals, every patient with measles should be isolated from every other patient with measles, so that if one should develop a secondary infection the others may be spared from its ravages. And furthermore, no one with a cold, grip or any manner of infection should be allowed to care for a patient with measles, or to go near one, lest he carry a secondary infection to an otherwise clean case. We are not fulfilling our duty to our patients if we do not exert every precaution for their protection from this very serious danger. This winter, and every year, we must be prepared to make the earliest possible diagnosis of measles, to isolate the patient on the first suspicion, and to protect him from secondary infection.

25 Claremont Avenue.

SEVERE GRANULOCYTIC APLASIA OF THE BONE MARROW

REPORT OF A CASE FOLLOWING ARSPHENAMINE TREATMENT IN CONGENITAL SYPHILIS *

KATHARINE DODD, M.D.
AND
SCOTT J. WILKINSON, M.D.
NASHVILLE, TENN.

It is recognized that arsenic compounds are well tolerated by children and that arsenic poisoning in the course of treatment for congenital syphilis is a rare occurrence. Arsenic poisoning affecting the brain, the liver or the skin has occasionally been reported from clinics where large numbers of children are treated. Veeder and Jeans [1] state that in several thousand arsphenamine injections in children they have observed only one reaction of each type, and that but one patient, one with encephalitis, failed to recover. One case of arsenic dermatitis occurred at the Vanderbilt Hospital in the last two years during which intensive treatment for syphilis has been carried out on sixty children. The case was a mild one and the patient soon recovered when arsenicals were discontinued.

The following fatal case of arsenic poisoning with marked changes in the blood picture is of interest because it is apparently the first case of its kind to be reported in a child. The symptoms began insidiously with pain in the side; there were no outward manifestations such as dermatitis or jaundice to call attention to the fact that the child was suffering from arsenic poisoning, and it was only when the blood was carefully studied that it was realized that some severe poisoning had occurred. Even then it was thought that the child had an overwhelming infection rather than arsenic poisoning. There was marked reduction in the number of white cells, with almost complete disappearance of the polymorphonuclear leukocytes.

REPORT OF CASE

C. D., a colored girl, aged 11 years, was brought into the clinic to be examined because of congenital syphilis in a younger member of the family. The early history did not suggest syphilis; she did not show syphilitic stigmas and was apparently in good health, except that she was underweight. The Wassermann and Kahn reactions of the blood were both positive. Following the usual routine at the children's syphilis clinic, she was given intravenously 0.3 Gm. of sulpharsphenamine, or 10 mg. per kilogram of body weight. One week later, the dose was increased to 0.4 Gm., or 15 mg. per kilogram of body weight. One week later, a third similar dose was given. There apparently was no unfavorable reaction to any of these treatments. The fourth week the child came alone to the clinic. After receiving a treatment of 0.45 Gm. of sulpharsphenamine, she said that she had been in bed for the past few days and that her side hurt. The temperature was normal, and she did not appear very ill. On physical examination it was found that the liver was large and tender, there was a general glandular enlargement, and the throat showed a grayish exudate. Because it was thought that she might be suffering from arsenic poisoning, she was advised to enter the hospital. On admission to the hospital the following day, the temperature was 101 F. The only additional finding of importance was a white blood count of 4,450, with marked decrease in the polymorphonuclear leukocytes. An exact differential count was not made. During the first few days in the hospital, the temperature was irregular, ranging around 101 to 102. The red count was 4,850,000; the hemoglobin, 80 per cent, and the white count, the same as before. She seemed to be improving. Blood cultures and a Widal test were negative. The icteric index was normal. Five days after admission the temperature suddenly went to 105 F. The throat became intensely red and painful and the mouth foul. The white count was still 4,500, but in the smear polymorphonuclear cells had entirely disappeared. There was prominence of the papillae all over the body, and the palms and soles were intensely red. Because of the sore throat, high fever and skin changes it was thought that the child might be developing scarlet fever and that the low white count and absence of polymorphonuclear leukocytes might be explained by an overwhelming infection. She was given Dochez scarlet fever antitoxin but failed to improve. Throat cultures consistently showed only staphylococci, although by the sixth day the child's throat was so sore that she could not swallow. The eighth day the temperature was still 105, and the white count had dropped to 2,350. A blood transfusion of 250 cc. of citrated blood was given. The posterior pharynx became swollen on one side, so that it was thought that the patient was developing a peritonsillar abscess. However, when the swelling was incised not a drop of pus could be obtained. The ninth day after admission, when a white blood count was attempted, only eight cells could be seen in the whole counting chamber, and in a blood smear the three white cells found were all lymphocytes. The platelets were diminished in number. At no time was any bleeding noted. The child died on the ninth day after admission, ten days after the last injection of arsenic.

At autopsy the observations were: enlargement of the liver without any distinct pathologic changes in its structure; bronchopneumonia with many organisms, some hemorrhage but no cellular reaction, and almost complete aplasia of the bone marrow, affecting especially the myeloblastic cells.

COMMENT

When the case was reviewed, it seemed probable that the arsenic had produced aplasia of the blood-forming elements, especially that part responsible for the polymorphonuclear series; that secondary infection had

* From the Department of Pediatrics of the Vanderbilt University Hospital.

1. Veeder and Jeans, in Abt's Pediatrics 5: 655, 1924.

Summary of Data in Cases of Arsenic Poisoning

Number of Case	Sex*	Age	Race	Drug	Doses	Reactions	Interval in Days Between Last Treatment and Appearance of Symptoms	Hemorrhages	Anemia	White Blood Count (Lowest)	Polymorphonuclears, per Cent	Platelets	Fever	Involvement of Mouth and Pharynx	Transfusion	Results	Postmortem Observations	Authors
1	♀	23	..	Neoarsphenamine..	8	..	1	+	.....	.....	..	.....	Moderate	..	..	Recovered	.....	Amwyl-Davies: Brit. J. Dermat. & Syph. **33**: 265 (July) 1921
2	♂	67	..	Neoarsphenamine..	13	..	12	+	Severe	4,000	Low	.....	High	+	..	Died	Incomplete.....	Chatteller: Bull. Soc. franç. de dermat. et syph. **30**: 51 (Jan.) 1923
3	♂	54	..	Arsphenamine.....	8													
				Sulpharsphenamine	7	..	14	+	Severe	500	0	175,000	High	+	2	Died	.....	Combes: Arch. Dermat. & Syph. **15**: 104-106 (Feb.) 1927
4	♂	29	C	Arsphenamine.....	2	1	0	+	Moderate	6,700	7	.....	High	..	..	Recovered	.....	Evans: Arch. Int. Med. **17**: 1 (Jan.) 1916
5	♀	46	W	Neoarsphenamine..	23	+	7	+	Severe	1,600	30	Very low	Moderate	+	2	Died	Hemorrhages; aplastic bone marrow	Feinberg: J. A. M. A. **78**: 888 (March 25) 1922
6	♀	45	..	Neoarsphenamine..	24	+	18	+	Severe	600	12	10,000	High	+	..	Died	Hemorrhages; aplastic bone marrow	Gorke: München med. Wchnschr. part 2, **67**: 1226 (Oct.) 1920
7	♀	19	..	Silver arsphenamine	10	2	3	+	Moderate	2,700	46	48,000	Moderate	+	..	Recovered	.....	
8	♀	33	..	Arsenical (drug?)...	11	..	8	+	Severe	1,200	Low	Very low	.....	+	..	Died	.....	
9	♀	24	..	Neoarsphenamine..	6	..	7	+	Moderate	550	6	.....	.....	..	..	Died	Hemorrhages; aplastic bone marrow	Kastlin: Am. J. M. Sc. **173**: 799-814 (June) 1927
10	♀	..	..	Neoarsphenamine..	16	6	7	+	Severe	4,600	30	.....	.....	..	..	Died	.....	Labbe and Langlois: Bull. et mém. Soc. méd. d. hôp. de Paris **43**: 786, 1919
11	♂	28	C	Arsphenamine.....	2	1	7	—	None	8,500	34	.....	.....	..	..	Recovered	.....	Moore and Foley: Arch. Dermat. & Syph. **1**: 25-42 (Jan.) 1920
12	♀	37	W	Arsphenamine.....	5	3	0	—	None	3,800	10	.....	Low	..	..	Recovered	.....	
13	♀	22	C	Arsphenamine.....	4	3	0	+	Severe	2,800	0	.....	Moderate	+	..	Recovered	.....	
14	♂	38	W	Arsphenamine.....	8	5	0	+	Moderate	600	½	.....	High	..	1	Died	Hemorrhages; aplastic bone marrow	
15	♀	50	W	Arsphenamine.....	2	2												
				Neoarsphenamine..	9	9	7	+	Moderate	550	4	23,000	High	+	4	Died	Hemorrhages; aplastic bone marrow	Moore and Keidel: Arch. Dermat. & Syph. **1**: 169-177 (Aug.) 1921
16	♀	..	..	Arsphenamine.....	6	6												
				Neoarsphenamine..	10	4												
				Sulpharsphenamine	7													
				Trypparsamide.....	16													
				Sulpharsphenamine	3	..	0	+	Moderate	4,370	63	80,000	.....	..	..	Recovered	.....	
17	♂	36	J	Neoarsphenamine..	8													O'Leary and Conner: Am. J. Syph. **9**: 262-273 (April) 1925
				Sulpharsphenamine	59	..	0	+	Moderate	7,300	88	44,000	.....	..	..	Recovered	.....	
18	♂	..	..	Neoarsphenamine..	18	+	1	+	Moderate	1,000	51	.....	Low	..	..	Died	Hemorrhages; bone marrow not examined	Rabut and Oury: Presse méd. **75**: 810-813 (Sept.) 1922
19	♂	48	..	Neoarsphenamine..	12	+	0	+	Severe	1,200	55	.....	High	..	2	Died	.....	
20	♂	44	..	Neoarsphenamine..	24	2	5	+	.....	.....	..	.....	.....	..	..	Recovered	.....	Smith: Arch. Dermat. & Syph. **11**: 237-240 (Feb.) 1925
21	♀	21	..	Neoarsphenamine	0													
				Merbaphen.....	2½†	+	6	+	Moderate	29,000	48	70,000	High	+	..	Died	Hemorrhages; aplastic bone marrow	Vill: München med. Wchnschr. part 2, **68**: 1675 (Dec.) 1921
				Colloidal silver 5% cc.	52													
22	♀	21	..	Silver arsphenamine	2													
				Merbaphen.....	2	2	0	+	Moderate	76,000	..	Very low	Moderate	..	..	Died	Hemorrhages; aplastic bone marrow	
				Colloidal silver 12% cc.	56													
23	♀	24	C	Neoarsphenamine..	2	2	0											
				Sulpharsphenamine	1	..	..	—	Slight	4,400	65	180,000	High	+	..	Recovered	.....	Vanderbilt Medical Department ‡
24	♀	11	C	Sulpharsphenamine	4	2	0	—	Slight	136	0	Very low	High	+	1	Died	Hemorrhagic pneumonia; aplastic bone marrow	
25	♂	32	W	Benzene.....	2 mo.	..	30	+	Severe	1,400	13	70,000	High	..	2	Died	Hemorrhages; aplastic bone marrow	Rohner, Baldridge and Hansman: Arch. Path. & Lab. Med. **1**: 221-223 (Feb.) 1926

* Male is indicated by ♂; female by ♀.

† Courses.

‡ This case will be reported later.

taken place, and that there had not been any cellular reaction to the infection because of lack of ability of the organism to form white blood cells.

Reports of twenty-two cases in adults showing similar reactions to the arsphenamines were found in the literature, but no similar case was found reported in a child. Summaries of twenty-four cases are given in the accompanying table, with our case included as the last in the series. The twenty-third case occurred in the medical service of the Vanderbilt Hospital after we were ready to report our case, and will be reported later by the medical service. Doubtless there have been cases other than those included in our table, as a specific name has not been given to this type of case. For example, one finds cases similar to these under the heading of purpura, agranulocytic angina, aplastic anemia and arsenic poisoning. The twenty-four patients included in the table had received treatment with various arsenicals: neoarsphenamine, arsphenamine, sulpharsphenamine and silver arsphenamine. The number of treatments given before the appearance of symptoms varied from a long series of treatments extending over two years to two treatments. In many of the cases there were slight reactions, such as itching of the skin, vomiting or general malaise, before the marked blood changes were noted. The cases were reported mostly as purpura or anemia following treatment with the arsphenamines. They differed somewhat from our case in that in a majority, twenty in twenty-four, there was bleeding either from the gums or from the skin and mucous membranes. Also, particularly in the cases in which there was marked bleeding, there was often a severe anemia as well as reduction in the white cells. The red blood count varied from 4,800,000 to 80,000 and the hemoglobin from 90 to 13 per cent. The cases, with two exceptions, were all similar to our case, in that there was marked reduction of the white blood count with reduction or complete disappearance of the polymorphonuclear cells. In the highest white count reported the cells numbered 76,000, in one case only, and in the lowest no white cells were found. The highest proportion of polymorphonuclears was 88 per cent, and in several cases polymorphonuclears could not be found in smears. Judging from the literature, the arsphenamines apparently produce a stimulation of the blood-forming elements of the bone marrow followed by a severe depression. The polymorphonuclear cells are the first to suffer. In most of the severe cases there was high fever. The only therapy used was transfusion. In no case was any apparent benefit derived from transfusion. Sodium thiosulphate was not used in any case. Fourteen out of the twenty-four cases were fatal. Autopsies, which were reported in nine cases, uniformly showed marked aplasia of the bone marrow with almost complete disappearance of the cells of the myelocytic series.

Eleven patients showed severe stomatitis with sore throat. In fact, one case in this series was reported as agranulocytic angina.[2] The disease began after two years of arsenic treatment for syphilis and followed shortly after an injection of neoarsphenamine. There were hemorrhages about the gums, a purpuric eruption and ulceration about the teeth. A search through reports of agranulocytic angina revealed several other cases which may have been due to arsenic poisoning, but the reports were not detailed enough to make one certain of the connection.

2. Kastlin, G. J.: Agranulocytic Angina, Am. J. M. Sc. **173**: 799-814 (June) 1927.

The blood picture in this type of arsenic poisoning is characteristic of granulocytic aplasia of the bone marrow and is doubtless found in other conditions. The similarity of this reaction of the blood to that produced by chronic benzene poisoning is striking. Such a similarity has been noted in several of the case reports. It therefore seems worth while to cite a case for comparison. The case cited[3] is the last one included in the table. The patient, who had been exposed to benzene for two months, showed a large, tender liver, petechial hemorrhages and high fever. The blood showed a marked anemia, leukopenia and comparative reduction in polymorphonuclear leukocytes; there were 860,000 red blood cells, 20 per cent hemoglobin, 1,400 white blood cells, and in the smear only 13 per cent polymorphonuclears. The patient received two transfusions without improvement in the blood picture. At autopsy many hemorrhages were found. The bone marrow was almost completely aplastic.

The arsphenamines contain a double benzene ring but it has not been proved that they ever break down into benzene in the body. The majority of patients treated with the arsphenamines do not show any marked progressive change in the blood picture after treatment. Some few patients react to the arsphenamines, or perhaps only to the brand of arsphenamine which they happen to receive, as all persons react to benzene. Experimental work along the line of the cause of this peculiar reaction is almost impossible, because it is not a universal reaction but only a very rare one. It is known, however, that the arsphenamines are excreted mostly by the liver and that arsenic tends to remain in appreciable concentration in the marrow of the long bones for some time after administration. It is interesting that no similar case of aplasia of the bone marrow could be found following the administration of arsenic compounds which do not contain the benzene ring, and that symptoms similar to those reported here are not given in pharmacologic textbooks even as are rare occurrences in inorganic arsenic poisoning.

This case is reported in order to call attention to a peculiar blood reaction occurring in a child treated with an arsphenamine. Twenty-two similar cases have been reported in adults. Although no therapy tried has been successful after the condition is sufficiently advanced to be well recognized, some patients less severely poisoned recover when arsenic is discontinued. Even in the more severe cases, it seems possible that had attention been paid to apparently slight reactions following earlier treatments, and had the blood been carefully studied before further treatments were given, the fatal outcome might have been avoided either by the administration of sodium thiosulphate or simply by the avoidance of further arsenic treatment.

3. Rohner, F. J.; Balbridge, C. W., and Hansmann, G. H.: Chronic Benzene Poisoning, Arch. Path. & Lab. Med. **1**: 221-226 (Feb.) 1926.

Value of Clinical Observation.—Clinical medicine in the past has been so much a matter of personal skill and experience that when the clinician dies his work dies with him, whereas the results of investigations in a laboratory are recorded so carefully that something tangible always remains to enable one worker to take up a subject at the stage where another has finished. There can be no doubt that skill in diagnosis, and more especially skill in prognosis, must always be largely a matter of individual experience; but if such valuable knowledge, gained during a studious life, is not to be lost when he who accumulated it dies, some means must be found to provide a foundation on which future investigators may build.—Ramsay, A. M.: *Brit. M. J.* **2**:1216 (Dec. 31) 1927.

RETROPERITONEAL LUMBAR (PARANEPHRIC) ABSCESS

REPORT OF TWO CASES RESULTING FROM MUSCLE STRAIN *

ALFRED BROWN, M.D.
Associate Professor of Surgery, University of Nebraska College of Medicine
OMAHA

Abscesses in the area situated behind the posterior parietal peritoneum which is bounded above by the diaphragm and below by the lower boundary of the false pelvis are of comparatively infrequent occurrence. Because of this rarity they have received little attention and less detailed study as to the exact anatomic regions in which they are found, and are commonly grouped into different types in a classification that is neither wholly anatomic nor wholly etiologic. In general, they are usually referred to as perinephritic abscesses, and a common classification of these is:

1. The perinephritic abscess.
2. The subphrenic abscess.
3. The tuberculous lumbar abscess.
4. The retroperitoneal abscess due to the perforation of a retroperitoneally situated appendix.

The so-called perinephritic abscesses are commonly divided into primary and secondary varieties with respect to their etiology but without reference to their anatomic situation. The primary type usually occurs as the result of a metastatic infection during the course of an infectious disease, such as typhoid, pneumonia or one of the exanthems. The secondary abscess results from the extension of a suppurative process from a neighboring organ, such as the kidney, by perforation of a stone or rupture or extension of a pyelonephritis; the spine, by extension of a tuberculous abscess, or the appendix, by perforation of an abscess into the retroperitoneal space. In this way classifications 2, 3 and 4 actually become subclassifications of group 1. No attempt is made to locate these abscesses accurately as to other anatomic situations.

The primary abscess may also be due to injury, either (*a*) rupture of the kidney substance or pelvis of the ureter with the escape of urine into the perirenal fat, or (*b*) in some instances a mild trauma, such as coughing, lifting a heavy weight, slipping and wrenching the side when trying to hold the body balance, and other slight injuries too numerous to mention. These are presumed to cause hemorrhages into the perirenal tissues, which become secondarily infected by a hematogenous, the renal or the intestinal route.

If this assumption of hemorrhage as the causative factor in this type of abscess is correct, and it seems to be most reasonable, it is questionable whether these abscesses should be classified as true perinephritic abscesses or rather as abscesses of the paranephric body of Zuckerkandl and Gerota, which is a continuation of the subperitoneal fascia of the abdominal wall and lies outside the true perirenal fat (figs. 1 and 2).

If hemorrhage results from muscular violence, such as a sudden strain, which is presupposed in this condition, it would come from the tearing apart of a few muscle fibers resulting from the sudden violence. The blood escaping from the surface of the muscle would enter the fatty layer covering this surface and would not reach the perirenal fat as it would not perforate the fascia of Gerota unless that structure were torn, and a tear of this fascia, because of its mobility, would not be apt to occur from muscular violence.

The observations in the following cases appear to bear out this assumption:

REPORT OF CASES

CASE 1.—*History.*—A. R. S., a married man, aged 34, a truck driver, who was admitted, Aug. 29, 1925, had been forced backward while lifting a heavy window sash from his truck, three weeks before admission, and had felt pain in the left side of the abdomen. He did not pay much attention to it and kept on working for three days, but he had sweats at intervals during the day and night and felt chilly at night. The fourth day after the injury he stayed at home but returned to work on the fifth day and remained at work for a week; then he had to stop working because he did not feel able to go back and remained at home. Ever since the injury he had had a dull constant aching pain in the left side below the ribs which grew worse toward night. The pain did not interfere with sleep, although it hurt him to turn over in bed. He had had occasional chilly sensations and profuse sweats but had not felt feverish. His appetite had been poor. He had had regular movements of the bowels without medication. He had not had any urinary symptoms and had not noted any change in the color of the urine.

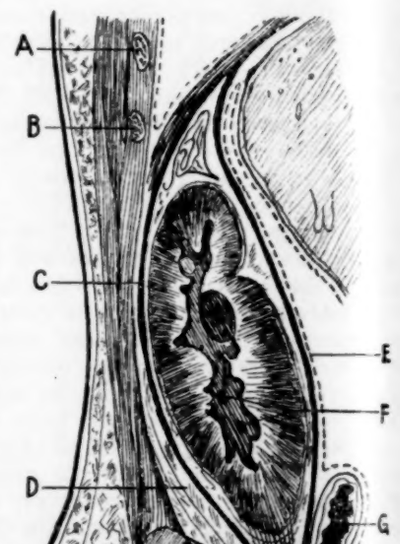


Fig. 1.—Sagittal section through posterior abdominal wall, showing the relations of the capsule of the kidney (after Gerota [Gray]): *A*, eleventh rib; *B*, twelfth rib; *C*, posterior lamella of renal fascia; *D*, paranephric body (site of abscess); *E*, peritoneum; *F*, vessels of hilum of kidney; *G*, section of right colic flexure.

Physical Examination.—The patient was of slight build but of good musculature; he was too small, however, for heavy manual labor. He looked quite sick, tired out and apathetic. Aside from some tenderness over the left oblique muscles posteriorly, the general examination was negative. There was no abdominal rigidity. The temperature was 101.8 F.; the pulse, 96, and the respiration, 22. The urine was straw colored, and had a specific gravity of 1.030. Tests for albumin and dextrose were negative. There was no pus or blood. Analysis of the blood showed: red blood corpuscles, 5,100,000; hemoglobin, 85 per cent; white blood corpuscles, 16,400; polymorphonuclears, 84 per cent, and lymphocytes, 16 per cent.

August 30, the patient still had a high fever. The general condition was poor, and he looked sick and anemic.

August 31, a Widal test was negative for *B. typhosus* and paratyphoid A and B. The white blood cells numbered 16,600 and the polymorphonuclears, 83 per cent.

September 1, there appeared to be a mass that could be felt through the left side of the abdomen. The white blood count was 19,200; polymorphonuclears numbered 91 per cent.

September 2, the Widal test was negative for *B. typhosus* and paratyphoid A and B. The patient still looked sick and was not improving. The mass was indefinitely palpable, and there was no rigidity of the abdominal muscles. A roentgen-ray examination was made by Dr. T. T. Harris, who reported

* Read before the Surgical Association of the Rock Island Lines, Omaha, Dec. 6, 1927.

that the thoracic and lumbar vertebrae were normal. The main cavity of the chest was normal with only a slight thickening in the middle portion. The left diaphragm was pushed upward with a distinct rounded dome arch. In the left lumbar region, the left psoas muscle was obscured by increased density. Roentgenographically there was pressure beneath the left part of the diaphragm and an increased density along the region of the left psoas muscle, which was probably due to inflammatory pathologic changes.

Operation and Course.—Operation was decided on and performed, September 4. Under general anesthesia an incision was made along the lateral border of the erector spinae muscle and prolonged downward above the crest of the ilium. The lower portion of the kidney fascia was adherent to the anterior surface of the psoas muscle, and below this point there was an abscess cavity lying immediately in front of the muscle, which contained about 2 ounces (60 cc.) of mixed pus and blood. Culture of this mixture showed *Staphylococcus albus*. A note made at the time of operation stated that the observations would bear out the assumption that this abscess was due to a tear of the muscle causing a blood clot which subsequently became infected. An uninterrupted convalescence followed, and the patient was discharged with the wound healed thirty-eight days after operation.

CASE 2.—*History.*—In the history given by N. J., a married woman, aged 37, the wife of a farmer, and referred by Dr. C. L. Housel of Taber, Iowa, Nov. 3, 1927, the only point bearing on her present condition was that five years before she had been in an automobile accident in which both arms were broken, the left knee cap was split and she suffered several scalp wounds. Since then she had had occasional pain in the right side which she described as starting under the short ribs and going all over the bowels, finally settling in the small of the back, which became tender. At times she had to be in bed three or four days. During the acute attack she became nauseated and vomited, and sometimes almost fainted. There was no change in the bowel movements. The pain did not have any relation to eating or to the menses. She thought that she did not have any fever during these attacks, which were from three to six months apart.

This history suggested gallbladder disease rather than abscess, but owing to the preponderance of the main disturbance no attempt had yet been made to prove or disprove this assumption.

The present trouble began one week before admission when the patient moved a large safe containing heavy dishes. The safe began to fall over on her, pushing her backward, and it took all her strength to right it. About two hours later, she noticed pain of a dead, sickening character, which started below the short ribs in front, passed backward and finally settled in the right side of the back and right hip. Three days after the onset of this pain, she vomited a couple of times, and on the same day had a chill which was repeated the fourth day, when she noticed a lump in the right side of the back. The following day she had irregular periods of sweating, which had continued. The appetite was very poor, but the bowel movements were normal. Urinary symptoms were not present, and since the transient discomfort at the onset, there had not been any pain in the front of the abdomen.

Physical Examination.—The patient was rather thin, evidently quite sick and apparently in considerable pain, but nothing noteworthy was found except the local condition. In the lower part of the right flank was a mass about the size of a large orange, which appeared to lie beneath the lateral muscles of the abdominal wall. This mass was tender. Its upper limit could not be made out definitely, and its lower limit seemed to merge with the crest of the ilium. Toward the median line, its limit was sharply defined by the softness of the abdominal wall, and the fingers could be pushed toward its posterior limit, indenting the abdomen, which was soft and did not present tenderness at any point. With bimanual examination, the mass gave a feeling of fluid under tension in a sharply defined area. Movement with respiration could not be made out.

The temperature was 102 F.; the pulse, 104, and the respirations, 25. Analysis of the blood showed: red blood corpuscles, 3,870,000; hemoglobin, 89 per cent, and white blood corpuscles 18,000, with 94 per cent polymorphonuclear leukocytes. The urine was a dark straw color, with a specific gravity of 1.022. Tests showed the presence of acid and albumin with a trace of acetone. Dextrose was absent. Microscopic examination showed occasional leukocytes and red cells.

Operation and Course.—With the previous experience in mind, there did not seem to be any indication for further investigation, and immediate operation was decided on. Likewise, bearing in mind the location of the abscess in the previous case and the unnecessary exposure of true perinephric fat which had been made, I decided on a low incision, under general anesthesia, beginning at the lateral margin of the erector spinae muscle and passing forward parallel to the crest of the ilium. The lumbar fascia was divided at the lateral margin of the erector spinae and an abscess entered which contained 6 or 8 ounces (from 175 to 235 cc.) of greenish yellow pus. The cavity was situated in front of the quadratus lumborum and psoas muscles, below

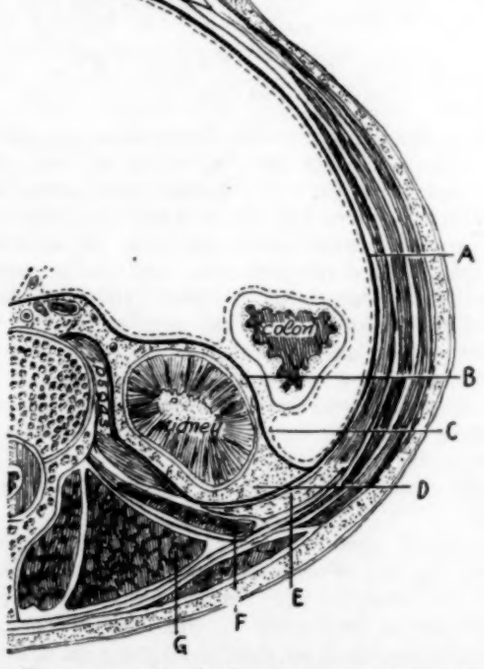


Fig. 2.—Transverse section, showing the relations of the capsule of the kidney (after Gerota [Gray]): *A*, subperitoneal fascia; *B*, anterior lamella of renal fascia; *C*, peritoneum; *D*, adipose capsule; *E*, paranephric body (site of abscess); *F*, quadratus lumborum; *G*, sacrospinalis.

the level of the kidney, and did not involve the true perinephric fat. After evacuation, a rubber drainage tube was inserted and the muscles closed around it. Cultures of the pus showed a moderate number of gram-positive diplococci with a tendency to chain formation. There were a few clusters, a moderate number of long curve bacilli and a few short thick bacilli. The pus had a marked odor of colon bacillus.

Convalescence was uneventful. The temperature became normal on the sixth day. On the eighth day, the white blood cells were 8,000, with 85 per cent polymorphonuclear leukocytes. On the tenth day the patient was sent home to the care of her local physician and was subsequently reported to be making satisfactory progress.

CONCLUSIONS

1. Traumatic abscess of the back, in common with the abscess occurring as an extension from tuberculosis of the spine and that resulting from the perforation of a retroperitoneally situated appendix, occurs in a definite anatomic area which contains fatty tissue that has

been designated the paranephric body. This fatty tissue is distinctly separated from the true fatty capsule of the kidney both by its chemical makeup and by reason of the fact that a layer of fascia is present between the two. An abscess, irrespective of its etiology, occurring in this tissue might more properly be called a paranephric abscess, the name of perinephritic abscess being reserved for that involving the true fatty capsule of the kidney and in direct relationship with the kidney itself.

2. The operative approach to this type of abscess through a low lumbar incision is more direct and affords better drainage, while at the same time it avoids injury to the kidney and its capsule, which may take place if one or the other of the usual types of kidney incision is employed.

Medical Arts Building.

THE ETIOLOGY AND RESULTS OF TREATMENT IN ANGIONEUROTIC EDEMA AND URTICARIA *

FRANK R. MENAGH, M.D.
DETROIT

This paper embodies the experience gained in the study and treatment of 260 cases of angioneurotic edema and urticaria. No distinction is made between these two disorders. It is assumed that they are the same process, involving in the case of urticaria the superficial layers of the skin, and in angioneurotic edema the subcutaneous tissues. In some instances other tissues may be involved also, as in the type of epilepsy due to allergic reaction. The point of view from which these observations are made is that in these cases the disorder is allergic, and that in every case there is a definite etiology. This etiologic factor is always the absorption of some foreign protein by a sensitive individual, just as in hay-fever and bronchial asthma.

Successful treatment in hay-fever and bronchial asthma depends on first determining what foreign protein or proteins are responsible for the reaction. The offending substance is then either removed or reduced in amount, so that absorption does not reach the point at which it will produce symptoms. In case this is impossible, an effort is then made to increase the tolerance of the individual sufficiently to allow him to absorb, without developing the characteristic reactions, such protein as cannot be removed. This is precisely the method followed in the treatment of angioneurotic edema and urticaria.

Long before the present methods of treating hay-fever were developed, it was recognized that hay-fever was associated with pollinating plants, although the plants regarded with the most suspicion, that is, roses and goldenrod, were eventually found to be relatively harmless. On actual test, it was found that the inconspicuous grasses and ragweed were the chief offenders. Likewise, in angioneurotic edema and urticaria, certain foods, especially sea-foods and strawberries, have long been suspected, while epsom salt and calomel have been time honored remedies in the treatment of these troublesome disorders. That treatment along these lines has not been especially successful is attested by the long list of remedies recommended in relatively recent literature, no less than seventy-five having been noted in a recent survey.

The series of cases considered here has been studied as an allergic group. Certain data have been considered because of the aid they give in determining whether or not a given individual may belong to this class. It will be seen (table 1) that there are only ninety-two, or 35.3 per cent, males, compared with 168, or 64.6 per cent, females. A similar study recently made of a parallel group with bronchial asthma showed 52.3 per cent males and 47.7 per cent females. This difference is due to the greater prevalence in women of certain of the etiologic factors to be discussed later. Another aid to diagnosis was the family history of allergy in eighty-five cases, or 32.6 per cent, of this group and a personal history of other allergic reactions in fifty-three patients, or 20.3 per cent, of the group. The age incidence (chart 1) is found to be approximately the same as for bronchial asthma. The ages ranged from infancy to over 70 years, with the majority of the cases falling in the age period from 30 to 49 years. It will be seen later that there are two distinct age groups, depending on etiology.

METHOD OF STUDY

The method of study followed was to take the usual history, being careful to elicit any information that might give some clue to the cause of the disturbance, following which a complete physical examination was made. The patient was then tested for hypersensitiveness to foreign proteins by the usual skin tests. The proteins derived from (1) foods, (2) animal emanations and (3) pollens were used in these tests. The method of applying these tests is well known and will not be discussed. The results (table 2) show that 152 patients, or 58.7 per cent, gave some reaction to one or more of these proteins. Of these, ninety-seven, or 63.8 per cent, showed a reaction to food pollens. Of this number only thirty, or 19.7 per cent, showed a reaction to sea-food, and even when such a reaction was found, in only one or two cases was it thought to play a rôle in the causation of symptoms. In one patient, an infant, cod liver oil was the cause of the rash. Only two patients were sensitive to strawberries, and fruits and berries generally were unimportant, as was also the case with meats. It must be borne in mind in this connection that transient, erythematous rashes were not considered in this series of cases. The foods found to be the most important were wheat, milk,

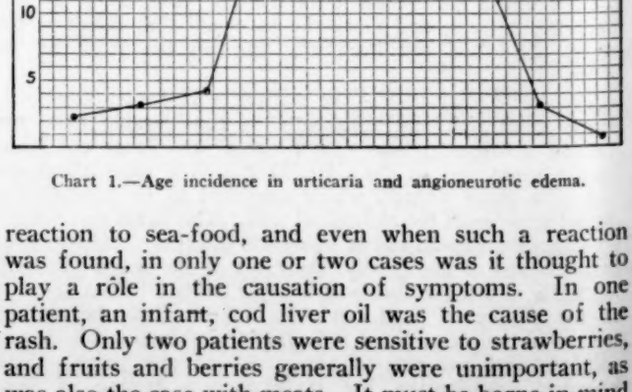


Chart 1.—Age incidence in urticaria and angioneurotic edema.

* From the Medical Department of the Henry Ford Hospital.
* Read before the Annual Meeting of the Michigan State Medical Society, June 17, 1927.

eggs and white potatoes. Two patients giving a history of attacks following the use of honey were found sensitive to clover.

It is not usual for proteins coming in contact with the skin externally to cause angioneurotic edema or urticaria. For this reason, observations of hypersensitiveness to animal emanations and to pollens are valuable chiefly because they help to establish the allergic status of the individual. An occasional patient will develop such symptoms, usually associated with severe hay-fever or with the use of hair or feathers in

TABLE 1.—*Sex and Allergic Data Obtained from Case Histories*

	Number	Per Cent
Cases studied	230	100
Males	92	35.3
Females	168	64.6
Patients with allergic family histories	85	32.6
Patients with other allergic manifestations than urticaria or angioneurotic edema	53	20.3

TABLE 2.—*Patients Reacting to Skin Tests and Type of Protein Giving Reactions*

	Number	Per Cent
Patients showing reaction	152	
Patients reacting to foods, including sea-food	97	63.8
Patients reacting to sea-food	30	19.7
Patients reacting to animal emanations	82	53.9
Patients reacting to pollens	78	51.3
Patients reacting to orris root (all women)	9	5.9

the bedding. An interesting fact was that nine patients, all women, reacted to orris root, a frequent ingredient of face powders. This is frequently the cause of bronchial asthma, and it was felt that it was responsible at times for urticaria appearing about the face.

In addition to the proteins considered, two cases appeared to be due to a chronic sinus infection, and one cleared following the removal of badly infected teeth and tonsils. One case recurred when an acute sinusitis developed. One very striking case of urticaria occurred in a 3 year old child with a severe infection spreading from the ethmoidal sinuses to the orbit of the eye. One case of urticaria was associated with a severe staphylococcus infection with cellulitis of the hip following an accident, the urticaria clearing with the infection. No other cases were found associated with these types of infection. There were five pregnancies in this series. The urticaria was definitely associated with the period of pregnancy but was probably due to factors to be discussed presently. One definitely allergic patient became sensitive to insulin, and developed marked attacks when he received it.

Syphilis has been cited as a possible cause of urticaria. Nine cases of syphilis were found, which is about the percentage in the general hospital admission. In no case did syphilis appear to be an etiologic factor, nor did treatment of the syphilis influence the urticaria.

In the group of patients so far discussed, we have found that 58.7 per cent can be considered allergic. It does not follow that, because they have reacted to certain foreign proteins, these proteins are the cause of the symptoms. In fact, further study and observation showed that we had discovered the etiology in only seventy-eight patients, or 30 per cent, while these proteins formed the partial etiology in twenty-nine additional patients, or in 11.2 per cent. We have thus some clue to the etiology in a maximum of 41.2 per cent of the total group. This leaves nearly 60 per cent in which no clue whatever is given from these studies, and it is this group that has always caused the greatest difficulty in the treatment of angioneurotic edema and urticaria.

SPECIAL GASTRO-INTESTINAL STUDIES

The recent increase of knowledge relating to diseases of the gastro-intestinal tract made me feel that important information might be gained from observation in this direction. Accordingly, as systematic a study as possible was made of digestive disturbances in this group of patients. The history and physical examination were checked and special methods for studying the gastro-intestinal tract were utilized. These special studies were made by the gastro-intestinal division of the hospital, and the standards accepted by them were used in diagnosis.

The only type of gastro-intestinal disorder[1] that appeared to be playing any rôle in the etiology of angioneurotic edema and urticaria was that associated with the biliary tract. In those cases showing severe involvement, it was not difficult to elicit plenty of evidence from the history and physical examination, showing an association between the biliary tract and the allergic symptoms. In the milder cases of biliary tract involvement, valuable information was obtained from the special studies and especially from transduodenal biliary drainage. As a result of this type of investigation (table 3), we found that 129 cases, or 48.8 per cent, of the entire group studied showed involvement of the biliary tract, and in these cases there were no other observations that could be interpreted as in any way related to the angioneurotic edema and urticaria. In addition to this, there were twenty-nine cases, or 11.2 per cent, which showed biliary tract involvement in addition to a possible etiology in other types of protein reaction. The biliary tract involvement ranged from

TABLE 3.—*Grouping of Cases According to Etiology*

	Number	Per Cent
Etiology in food or other proteins but with no biliary tract involvement	78	30
No etiology except in biliary tract	127	48.8
Etiology in both food and other proteins and in biliary tract	29	11.2
No etiology found	26	10
Total	260	100

TABLE 4.—*Various Reactions in Group With Biliary Tract Involvement*

	Number	Per Cent
Drainage done in the 127 cases of this group	97	76.4
Cases in which cultures were obtained from the bile	81	83.5
Cases from which autogenous vaccines were prepared	75	77.3
Patients tested against autogenous vaccines	65	86.7
Patients showing positive reactions to autogenous vaccines	55	73.3
Patients showing negative reactions to autogenous vaccines	10	13.3

the most severe and acute attacks to cases interpreted as early biliary tract infection and recognizable only through a study of material obtained through transduodenal drainage.

In view of this information, we concluded that absorption from the biliary tract played a very important part in the causation of angioneurotic edema and urticaria. If this absorption was in the nature of a foreign protein, it seemed probable that the source of this would be found in bacteria present in the biliary

1. Mateer, J. G., and Henderson, W. S.: Chronic Biliary Tract Disease and Diagnostic Criteria, Arch. Int. Med. 38:70 (Dec.) 1926.

tract, whether such bacteria were actually causing an active inflammatory reaction or not. We are entirely aware of the difference of opinion as to the value of cultures made from material obtained from the so-called sterile transduodenal drainage. Such sterile drainages were made wherever possible, and as the results at least are interesting, they are presented in table 4. In the 129 cases showing only biliary tract involvement, sterile transduodenal drainage was done in ninety-seven. Positive cultures were obtained in eighty-one, or 83.5 per cent, and autogenous vaccines were obtained in seventy-five, or 77.3 per cent, of the drainages from which cultures were taken. Of these vaccines, ten were never tested; ten, or 13.3 per cent, gave negative reactions, while fifty-five, or 73.3 per cent, gave positive reactions. In every case, at least two other vaccines, and the solution in which the organisms were suspended, were used as controls. These controls consisted of a nonautogenous vaccine containing an organism similar to the one being tested for each autogenous vaccine being tried, and a nonautogenous vaccine with a different organism. Observation was extended over a period of twenty-four hours, and only those cases were considered positive in which a definite reaction with the autogenous strain was obtained. It is also noteworthy that at times attacks of urticaria were brought on by the hypodermic administration of these vaccines.

The organisms recovered (table 5) show the largest group in the nonhemolytic streptococcus strains, including *Streptococcus viridans*. *Staphylococcus albus* comes next with *Staphylococcus aureus* and the colon bacillus, in the order named. One culture each of *Micrococcus catarrhalis* and hemolytic streptococcus were obtained.

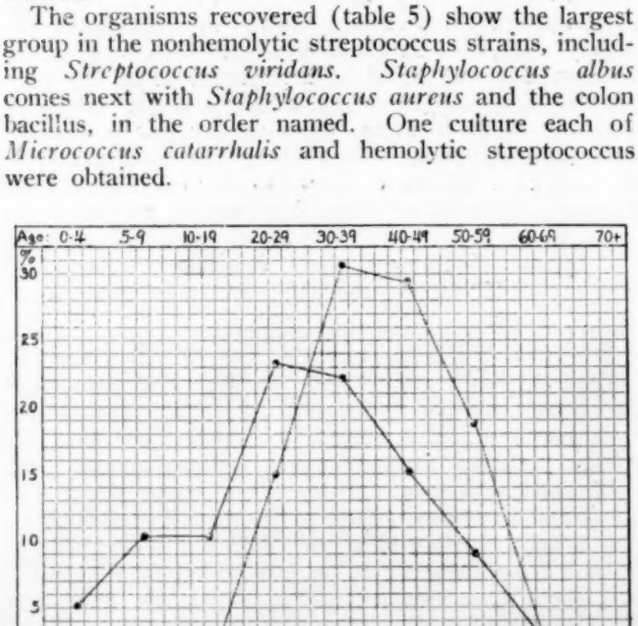


Chart 2.—Age incidence in group in which the cause was outside the biliary tract and in group of patients with involvement of biliary tract: solid line, age incidence in group in which the cause was outside the biliary tract; broken line, group of patients with involvement of biliary tract.

PARALLEL STUDIES IN BRONCHIAL ASTHMA

During the period of this study, a parallel group of patients with bronchial asthma was being observed.[2] In the asthmatic patients, the vaccines found to be of importance were those obtained from the upper respiratory tract. Consequently, in this series, extensive observations were made with autogenous vaccines derived from the same source as well as from teeth and tonsils, but the only positive results obtained were in those few cases mentioned previously in this paper. Conversely, no cases of bronchial asthma were found to be due to biliary tract infection.

2. Menagh, F. R.: Results of Treatment in Bronchial Asthma, Ann. Clin. Med. 5: 656 (Jan.) 1927.

COMMENT

I believe that results as definite as these are worthy of some careful consideration. There would seem to be some basis for concluding that protein from bacteria in the gastro-intestinal tract is a possible source of a considerable percentage of cases of angioneurotic edema and urticaria.

TABLE 5.—*Organisms from Which Autogenous Vaccines Were Made and Those Giving Positive Skin Reactions*

Organism	Vaccines Obtained	Vaccines Positive
Hemolytic streptococcus	1	1
Nonhemolytic streptococcus	18	11
Streptococcus viridans	23	17
Staphylococcus aureus	18	15
Staphylococcus albus	30	24
Micrococcus catarrhalis	1	1
Bacillus coli	10	8

As a result of these observations, these cases arranged themselves as follows according to etiology (table 3):

1. Cases in which the etiology was found to be in food or other proteins but showing no involvement of the biliary tract. These comprised seventy-eight, or 30 per cent of entire group.
2. Cases showing no etiology except biliary tract involvement, of which there were 127, or 48.8 per cent.
3. Cases showing both biliary tract involvement and hypersensitiveness to other proteins, totaling twenty-nine, or 11.2 per cent.
4. Cases in which no clue as to etiology was discovered. There were twenty-six of these cases, or 10 per cent of the entire series.

AGE AND SEX INCIDENCE

As might be expected, the age incidence for these two groups varies (chart 2). In the group showing an etiology outside the biliary tract, the majority of the cases occurred in patients from 20 to 39 years, while in the group showing only biliary tract involvement as an etiologic factor, the majority of the cases occurred between the ages of 30 and 49.

An interesting fact is now seen in the sex incidence previously mentioned. In the total group there were 64.6 per cent females and 35.3 per cent males. If only that part of the series included in the group showing no biliary tract involvement is considered, there are 48.6 per cent males and 51.4 per cent females, while the group with biliary tract involvement includes only 30 per cent males and 70 per cent females. The entire excess of females is thus found to be in the group showing biliary tract involvement, and is in accordance with the well known fact of greater prevalence of biliary tract infection in women than in men.

The five cases occurring in pregnancy are also explained on the basis of biliary tract infection in those studied, and this might possibly be a factor in the others.

TREATMENT

Treatment in all these groups consisted in removing as far as possible the offending protein whenever this could be done. If this was impossible, an attempt was made to increase the tolerance of the individual by administering the protein in graduated doses. This method was not as successful here as in hay-fever and in some types of bronchial asthma. In the group in

which biliary tract disease was associated with the symptoms, a number of methods were used. The diet and bowels were regulated; bile salts were administered, biliary drainages were done and when autogenous vaccines had been found to be positive they were administered. It is felt that vaccines often are valuable but only when the other methods of treatment precede and accompany them. Therapeutic biliary drainage is of great value. At times urticaria makes its appearance with the drainage, but more often striking relief is obtained. Many patients in the group with biliary tract disease showed returning allergic symptoms as the first indication of a biliary tract flare-up, and in some instances the first evidence the patient had ever had that a cholangeitis or cholecystitis existed was the appearance of urticaria. Later, they have developed severe symptoms relative to the tract.

Surgery did not contribute a great deal to the treatment in these cases. One patient gave a history of the urticaria appearing after an operation for gallstones, while only three had gallbladder surgery performed while under my observation. Complete relief was obtained in all three of these cases, however. It appears that cholangeitis is more commonly associated with this type of absorption than is cholecystitis.

In tabulating the results of treatment (table 6), it was found that in ninety-four cases out of the 260, or 36.1 per cent, the results were unknown. In these calculations, only the known results are considered. The results are known in 166 patients, of whom twenty-seven, or 16.3 per cent, were unimproved; sixty-four, or 38.6 per cent, were definitely improved but developed attacks when the etiologic agents became active, and seventy-five, or 45.2 per cent, were well. Individuals in this group called well would also develop attacks again if they came into contact with a sufficient amount of the protein to which they were sensitive, but they were generally able to avoid it.

The results given by the two principal groups are of interest. In the group not associated with biliary tract absorption, 14 per cent were unimproved, as compared to 11.4 per cent of the group with biliary tract involvement. In the first group, only 28 per cent were improved as compared to 50 per cent in the second, but 57 per cent were considered well as compared to only 38.5 per cent in the group with biliary tract disturbance. When it is realized that to improve an infection in the biliary tract is usually possible but that to clear it entirely is very difficult, the difference in these results is seen to be a quite logical one.

TABLE 6.—*Summary of Results from Treatment* *

Group	Unimproved		Improved		Well		Total
	No.	%	No.	%	No.	%	No.
Entire series	27	16.3	64	38.6	75	45.2	166
Group showing etiology only in biliary tract involvement	9	11.5	39	50	30	38.5	78
Group showing etiology in food and other proteins but no biliary tract disease	8	14	16	28.1	33	57.9	57

* Cases in which results are not known were not included in the statistics.

SUMMARY

1. In 260 cases of angioneurotic edema and urticaria, these disorders have been considered as allergic phenomena.

2. These cases have been classified into two major groups, according to etiology. In one group comprising 30 per cent of the series, in which there was entire freedom from biliary tract disorders, the etiologic factors were the absorption of food and other foreign proteins. In the second group, comprising 48.8 per cent of the series, biliary tract disease was the only etiologic factor. Observations were made relative to the absorption of bacterial proteins from the biliary tract in these cases.

3. The etiologic factors in 11.2 per cent were biliary tract disease and the absorption of other types of foreign protein.

4. Treatment was directed toward the biliary tract when this was involved, and toward the removal of active foreign proteins in those cases in which these proteins were responsible for the symptoms.

5. In those cases in which results are known, 16.3 per cent were unimproved by treatment, 38.6 per cent were improved, and 45.2 per cent showed complete relief.

CONCLUSION

In searching for the etiology of angioneurotic edema and urticaria, it is necessary to consider absorption from the biliary tract as a possible cause in addition to the usual foreign proteins considered in other allergic problems. When this factor is kept in mind, treatment gives satisfactory results.

QUANTITATIVE STUDY OF CLINICAL ULTRAVIOLET SOURCES

HERMAN GOODMAN, M.D.
AND
WILLIAM T. ANDERSON, JR., PH.D.
NEW YORK

The greatly increased utilization of ultraviolet rays in therapy and the numerous requests for detailed information as to the emanation from various available sources, and especially for a comparison of such sources, has led us to investigate quantitatively a number of the more practical sources.

Many reports of such sources are available from the standpoint of the pure physicist. These reports are not adapted to the needs of the physician. The ultraviolet has been described as a whole without further division, or the divisions of the ultraviolet selected by the physicist have not been in accord with the known physiologic action of these rays. There has been no uniformity of the sources studied, making it impossible to interpret the results in view of clinical experience. There have been too many variable conditions to which the clinician cannot hope to conform.

Existing literature is difficult to interpret because the investigators have not clearly defined the regions of radiation studied. Many measurements have been expressed in percentage without due consideration of what constituted the total radiation (100 per cent). Thus, for example, the mercury vapor arc in quartz has been said to give 66 per cent ultraviolet; in another instance the ultraviolet has been stated to be 28 per cent. Both are correct. In the first instance, the total radiation (100 per cent) on which the percentage is based comprised radiations from 1,850 to 14,000 angstrom units. In the second instance, the total radiation measured was from 1,850 to 40,000 angstrom units. Similar variation exists in data for carbon arcs. Original papers from the physicists in nearly all cases state the basis of their percentages. Compilers of medical litera-

ture, however, frequently fail to mention this basis, with the result that the literature abounds in many extravagant figures which are wholly incomparable and not justifiable. These pitfalls have been numerous with the result that many misconceptions have, by virtue of repetition, become accepted as fact.

The ultraviolet has been of greatest interest to physicians. For a proper understanding of the ultraviolet, we offer the following concept: The ultraviolet, as its name implies, is that region of the spectrum beginning at 3,900 angstrom units contiguous to the visible violet, and extending to the limit of transmission of air, at about 1,850 angstrom units. Not all the ultraviolet is of value therapeutically or biologically. In rickets, in tetany, in activation of food, oils and feeds, and, indeed, in all biologic investigations of the action of the ultraviolet, the upper limit of effective radiations has been found to be at about 3,200 angstrom units, which is the limit of ultraviolet transmission of ordinary window glass, and serves as a convenient division point in our concept. The limit of noon summer sunlight at about 2,900 angstrom units constitutes another dividing line.

TABLE 1.—*Distribution of the Ultraviolet Rays*

Angstrom Units*	Spectral Region
7,700 to 3,900.....	Visible light from red to violet
3,900 to 3,200.....	Intravital ultraviolet (passes through window glass)
3,200 to 2,900.....	Vital ultraviolet (present in sunlight and does not pass through window glass)
2,900 and shorter...	Extravital ultraviolet (not present in sunlight)

* One angstrom unit equals 0.0000001 mm.

We have called the biologically active ultraviolet between 2,900 and 3,200 angstrom units the vital ultraviolet. This zone is present in summer noon sunlight; does not pass through ordinary window glass, and is essential for the normal growth of babies, for the activation of foods and oils, for effecting normal calcium metabolism in pregnant women, for causing sunburn and sun tan, and for a host of biologic reactions that have not yet been clearly defined.

We have called the zone between 3,900 and 3,200 angstrom units, which is the ultraviolet present in sunlight and which passes through ordinary window glass, the intravital ultraviolet. This zone has no known, measurable, effective, health-giving value for animals and man.

The radiation shorter than 2,900 angstrom units, not found in sunlight but emitted by a number of artificial sources, is termed the extravital ultraviolet. This zone is also of therapeutic value. Recent experimental work proves that these radiations are very effective in curing rickets, and in activating cholesterol, foodstuffs and oils. However, unlike the vital ultraviolet zone, they are weak in production of the erythema.

A presentation of the distribution of the emanated energy of a number of practical sources of light based on the concept given has proved of value to the physician employing ultraviolet, and deserves wide dissemination.

The division of the ultraviolet energy from the light sources into intravital, vital and extravital ultraviolet necessitated an accurate measurement of the energy in the component wavelengths, together with a determination of the total ultraviolet energy from the sources under definite operating conditions. This was accomplished by measuring the light spectralized by a system of quartz lenses and prisms, a bismuth silver thermopile and a galvanometer being employed as the recording device. By this method we were able to determine readily the quantitative relative intensity of the component wavelengths for the region extending from the violet (4,100 angstrom units) to a point in the extravital ultraviolet at 2,450 angstrom units. The ultraviolet limit was chosen at 2,450 angstrom units because the sources investigated did not emit shorter radiations of appreciable intensity.

The total intensity of the light source at a distance of 40 inches was obtained by passing the light first through a quartz cell containing distilled water (which removed the long infra-red); then through a plate of Corning corex, G 986-A (which transmitted only light from 2,450 to 4,100 angstrom units, and a little red and infra-red), and thence into the thermopile. The amount of transmission for the various wavelengths through filter G 986-A was carefully determined. It was therefore possible to correct for variations in transmission. As the red and infra-red rays that pass through the filter also affect the thermopile, it was necessary to apply a correction, which readily was made by passing the light through a Corning G 24 filter in addition to the quartz cell and G 986-A glass. Corrections were also made for reflection of light from the quartz water cell and for the glasses. In addition, the transmission of G 24 filter was known. The thermopile and galvanometer used was carefully calibrated against a radiation standard provided by the United States Bureau of Standards, which made it possible to express the measurements in absolute units; namely, ergs per second per square millimeter of area at 40 inches. This gave us fourteen zones extending from 4,100 angstrom units in the visible violet to 2,450 angstrom units in the ultraviolet. A combination of these zones in the proper way gave the information desired under the headings intravital, vital and extravital ultraviolet.

TABLE 2.—*Ultraviolet Units in Ergs per Second per Square Millimeter of Area at Forty Inches*

Type of Arc Lamp Direct Current	Arc Voltage	Arc Amperage	Arc Length, Mm.	Intravital, 4,000 to 3,200	Vital, 3,200 to 2,900	Extravital, 2,900—
Quartz mercury arc (used 200 hours).....	75	3.4	55	10.981	8.585	4.034
White flame, therapeutic carbon A.....	35	17.0	15	7.803	1.120	0.407
Therapeutic carbon B, blue flame "iron".....	35	16.0	13	6.635	2.199	1.441
Carbon C; nickel, iron, aluminum.....	43	16.0	8	18.651	6.106	3.197
Carbon E, red flame, strontium fluoride.....	40	16.0	10	5.188	1.534	0.577
Carbon F, tungsten.....	38	16.0	7	7.332	1.855	1.228
Carbon G, nickel.....	40	16.0	11	10.108	2.441	0.668
Carbon H, yellow flame, calcium fluoride.....	40	16.0	12	4.296	1.215	0.439
Carbon K, cobalt.....	40	16.0	15	13.651	1.663	0.763
Carbon A.....	42	8	10	4.274	0.593	0.213
Carbon B.....	41	8	12	0.516	0.180	0.118
Carbon C.....	42	8	8	1.919	0.601	0.329
Carbon E.....	40	8	18	0.714	0.235	0.094
Carbon G.....	41	8	3	1.644	0.333	0.099
Carbon H.....	40	8	13	1.173	0.326	0.118
Carbon K.....	40	8	5	2.221	0.261	0.130
Alternating current, quartz mercury arc (three electrode type) (not rectified)	150	5	120	9.380	11.313	6.286

We are not unmindful of the fact that future study may reveal measurable biologic action of radiation frequencies outside the zone which we have described as vital. In fact, we hope ourselves further to analyze measurable biologic activity on the basis of specificity of particular portions of the spectrum. For the purposes of this paper, and in view of available clinical sources of ultraviolet as used in therapy, both the con-

cept of vital ultraviolet as here given and table 2 should prove of value to the practitioner.

Ultraviolet dosage has been and is empiric.

The physician who uses the light sources exactly as given in table 2 has for the first time an actual understanding of the energy in the various zones of the ultraviolet reaching his patient. He is now able to compare clinical observations with source characteristics. With increasing experience based on the results here reported, some idea of dosage will be formulated.

18 East Eighty-Ninth Street.

DIPHYLLOBOTHRIUM LATUM (LINN., 1758), THE BROAD TAPEWORM OF MAN

EXPERIMENTAL STUDIES *

TEUNIS VERGEER

ANN ARBOR, MICH.

The observations and experiments reported in this paper were made during the years 1926 and 1927 for the purpose of studying the occurrence and distribution of *Diphyllobothrium latum* (Linn.) in the Great Lakes region with particular reference to Michigan. Prof. A. S. Warthin,[1] director of the pathologic laboratories of the University of Michigan, stated that as early as 1897 he had predicted that the broad tapeworm of man would become endemic in the mining regions of the upper peninsula of Michigan, which are populated by immigrants from Finland, Sweden and other Baltic countries where fish are eaten uncooked, either fresh, dried, smoked or "cured." Since 1902, Dr. Warthin had occasionally received specimens which caused grave suspicion that this parasite was established in the mining regions of the upper peninsula of Michigan, but up to 1906 its occurrence in the United States except in foreigners was a matter of conjecture. Nickerson,[2] in 1906, reported the first native case from Ely, Minn., and since that time several cases have been reported from various places. In the report of Nickerson is the first record of the examination of fish for the plerocercoids. Concerning some dibothriocephalid larvae which he found, he made the following statement: "I have obtained them from fish caught in the Great Lakes, but without feeding experiments to rear the adult worm from the larva it is impossible to determine the species of *Dibothriocephalus* and the probability is in favor of such larvae being of some species other than *latus*—the parasite of man." As Nickerson did not mention the species of fish examined, it is not possible to conjecture concerning his observations. Warthin reported finding the plerocercoids in burbot, *Lota maculosa* Le Sueur, from Portage Lake Entry, Houghton County, Mich., adding that "in about one third of the fish of this variety examined numerous measles were found in the peritoneum, liver, and roe sac . . . about the size of a large pinhead, white, and when dissected were found to contain small white wormlike bodies varying in size from 7 to 17 mm. and possessing a telescopic headlike end with groove"; but "pike were free from it . . . in the same region." He did not perform any feeding experiments.

Lyon[3] has summarized the data in all cases of *D. latum* known to be of American origin occurring in human beings.

METHODS OF INVESTIGATION

The present study involved careful examination of fish from a number of sources, and the feeding of plerocercoids to dogs and cats for the purpose of rearing the adult worms. In the examination of the fish for plerocercoids, both the flesh and the viscera of all fish were examined, except of those lake herring which were used for obtaining an additional supply of plerocercoids for feeding experiments. Of these, only the stomachs were examined. The viscera of every fish were subjected to a close examination, each part being removed after inspection. While a close watch was kept for plerocercoids, the liver and reproductive organs and occasionally the spleen were teased into small pieces. In order to examine the flesh the skin was generally incised around the head, along the dorsal and ventral sides, and each half was torn off from the anterior to the posterior end. The inner surface of the skin and the adhering flesh was examined first; then all the flesh was searched and removed in small particles from the skeleton. Everything that in any way resembled a cyst or worm was further examined with the aid of a binocular or compound microscope. Some specimens were saved from all lots of plerocercoids found.

TABLE 1.—*Species of Fish Not Infested with Any Species of Bothriocephalid Plerocercoid in the Localities Indicated*

Time of Examination	Number in Each Lot	Fish Examined	Locality
Summer, 1926.....	16	Great northern pike, Esox lucius Linnaeus*	Douglas Lake,† Cheboygan County, Mich.
February, 1927.....	2	Great northern pike, Esox lucius Linnaeus*	Lake Erie ‡
March, 1927.....	7	Sand pike, Stizostedeon canadense-griseum De Kay*	Lake Erie ‡
April, 1927.....	4	Sand pike, Stizostedeon canadense-griseum De Kay*	Lake Erie ‡
April, 1927.....	2	Blue pike, Stizostedeon glaucum Hubbs	Lake Erie ‡
April, 1927.....	1	Carp, Cyprinus carpio Linnaeus	Lake Erie ‡
March, 1927.....	1	Sturgeon sucker, Catostomus catostomus Forster	Lake Erie ‡
March, 1927.....	3	Common sucker, Catostomus commersonnii Lacepede	Lake Erie ‡
February-March, 1927	24	Yellow perch, Perca flavescens Mitchill	Lake Erie ‡
Summer, 1926.....	30	Yellow perch, Perca flavescens Mitchill	Douglas Lake, Cheboygan County, Mich.
Summer, 1926.....	10	Rock bass, Ambloplites rupestris Rafinesque	Douglas Lake, Cheboygan County, Mich.
Summer, 1926.....	6	Sunfish, Eupomotis gibbosus Linnaeus	Douglas Lake, Cheboygan County, Mich.
March, 1927.....	1	Large mouth black bass, Aplites salmoides Rafinesque	Washtenaw County, Mich.
April, 1927.....	2	Pilot, Prosopium quadrilaterale Richardson	Near St. Ignace, Mich.

* Although negative here, fish of this species taken in an endemic area were infested.
† Ten young up to 15 cm. long.
‡ Locality stated by local dealer from whom fish were purchased.

The dogs and cats used for the feeding experiments were known to be free from tapeworms. Whether these animals became infested by the plerocercoids fed

* From the Department of Zoology and the Biological Station of the University of Michigan. This investigation has been carried on under grant 96 awarded to Profs. George R. La Rue and A. S. Warthin by the Committee on Scientific Research of the American Medical Association.

1. Warthin, A. S.: Report on the Occurrence of the Fish-Tapeworm (Dibothriocephalus Latus) in Michigan, Public Health, Mich., January-March, 1912, pp. 78-84.

2. Nickerson, W. S.: The Broad Tapeworm in Minnesota, with the Report of a Case of Infection Acquired in the State, J. A. M. A. **46**: 711-713 (March 10) 1906.

3. Lyon, M. W., Jr.: Native Case of Infestation by the Fish Tapeworm Diphyllobothrium Latum, J. A. M. A. **86**: 264-265 (Jan. 23) 1926.

to them was determined by either or both of two methods, namely, fecal examination and autopsy. After the feeding of plerocercoids, a certain length of time was allowed for their development to the egg laying stage, as indicated in the tables, after which fresh feces were collected and examined microscopically by the smear method; i. e., a small amount of fecal material was mixed with water on a slide and examined under a cover glass. From five to ten smears were made, and if eggs were not found the remainder of the fecal material was thoroughly mixed with water, generally a quart, and time was allowed for any eggs that might be present to settle to the bottom of the container, the suspension then being decanted. This was repeated until the water remained clear. The sediment was then again microscopically examined. The eggs of *D. latum* are very heavy and settle readily to the bottom. If sufficient time is allowed for sedimentation, no other method can be more accurate.

Killing the experimental hosts and carefully examining the whole digestive tract is also a dependable method of determining an infestation and has been used repeatedly by me. Chloroform was found undesirable for use in killing the hosts because it causes the tapeworms to break and the parts to pass to the large intestine. These effects may be due to violent peristalsis of the intestinal wall. Suffocation of the animals in illuminating gas leaves the tapeworms attached to the intestinal mucosa and does not cause breakage. The hosts killed in this way are entirely relaxed and there do not appear to be any strong peristaltic movements of the intestine. The intestine was opened by means of scissors. The tapeworms were collected and gently washed in tap water, straightened out (not stretched), measured, and then fixed in a saturated aqueous solution of mercuric chloride to which a little acetic acid was added. They were transferred through graded strengths of alcohol, and preserved in 70 per cent alcohol to which some glycerin was added to keep the tissues soft and prevent drying out in case the alcohol should evaporate. Plerocercoids were preserved in the same manner.

EXAMINATIONS OF FISH FROM THE GREAT LAKES

Michigan, Indiana, Illinois and Minnesota, from which states have been reported all the native cases of broad tapeworm in man that have come to our attention, receive a large part of their commercial supply of fresh-water fish from the Great Lakes and from the lakes of Canada. Nearly all cities situated on the shores of the Great Lakes and on the banks of the tributary rivers have water-borne sewerage systems. Furthermore, the traffic on these lakes, especially in summer, is very heavy, and daily passenger service has been established between all important harbors. For these reasons, fecal contamination must be considerable. Therefore, it was deemed necessary to examine many specimens of all the more important food fishes occurring in the Great Lakes. Fish were secured from Lakes Erie, Huron, Michigan, Superior and Ontario. Many fishes were examined from Lake Erie, because all the Detroit sewage, which might carry eggs of *Diphyllobothrium latum* passed by the many northern Europeans living in that city, goes into that lake, and also because steamship traffic is heaviest on Lake Erie. No portion of the Great Lakes was known to be producing fish infested with the plerocercoids of *D. latum*. In the examinations of the food fishes of the Great Lakes certain plerocercoids were found, but none of these proved to be the plerocercoids of *D. latum*.

The names and sources of all species of fish examined with negative results are given in table 1. If not otherwise stated in the tables, the fish examined were

TABLE 2.—*Species of Fish Infested with Bothriocephalid Plerocercoids of Other Species Than Diphyllobothrium Latum*

Time of Examination	Number of Specimens in Each Lot	Fish Examined and Locality Where Found	Number of Plerocercoids Found: Average*	Minimum	Maximum	Number of Plerocercoids Fed	Experimental Host	Days Allowed for Development	Results
			Located in Stomach Tissues of Host						
		Lota maculosa Le Sueur							
Summer, 1926..	6	Lake Huron near Cheboygan	12	0	20	30	Dog 1	14	Fecal examination negative
Summer, 1926..	6	Grand Traverse Bay	1	0	3	5	Dog 2	30	Autopsy negative
November, 1926	6	Saginaw Bay	¾	0	2	4	Dog 3	30	Autopsy negative
December, 1926.	8	Lake Huron near Alpena	1¼	0	3	9	Dog 4	30	Autopsy negative
April, 1927.....	3	Lake Erie near Toledo	0	0	0	0	0		
			Under Peritoneum of Stomach						
		Leuciichthys artedi Le Sueur							
February, 1927.	12	Lake Erie †	4	3	12	30	Dog 5	31	Recovered one mature bothriocephalid at autopsy
March, 1927....	6	Lake Erie	3	2	5	10	Dog 5	16	
April, 1927.....	14	Near St. Ignace	5½	2	13	77	Dog 7	60	Autopsy negative
April, 1927.....	12	Near Bay City	4	0	8	46	Cat 8	57	Autopsy negative
April, 1927.....	10	Lake Huron †	2	1	8	9	Kitten 9	8	At autopsy recovered six immature bothriocephalids
May, 1927.....	16	Lake Huron †	2	0	7	23	Kitten 10	4	Recovered five immature bothriocephalids
May, 1927.....	9	Lake Erie near Sandusky	1+	1	3	8	Dog 11	50	Fecal examination negative
May, 1927.....	24	Lake Superior	3—	0	11	40	Cat 12	41	Autopsy negative
						24	Cat 13	41	Autopsy negative
July, 1926.....	40	Douglas Lake, Cheboygan County Mich...	0	0	0				
May, 1927.....	25	Near St. Ignace, Mich.	3½	0	7	86	Dog 14	30	Autopsy negative
May, 1927.....	24	Near St. Ignace, Mich.	3+	0	12	70	Dog 15	40	Fecal examination negative
May, 1927.....	21	Near Grand Haven, Mich.	3½	0	14	88	Dog 16	40	Autopsy negative
May, 1927.....	19	Near Grand Haven, Mich.	2	0	10				
May, 1927.....	44	Near St. Ignace, Mich.	2	0	7				
May, 1927.....	50	Near St. Ignace, Mich.	4	0	12				
		Leuciichthys kiyi Koelz							
May, 1927.....	12	Lake Superior	¾	0	2				
May, 1927.....	12	Lake Ontario	2	0	6				
May, 1927.....	12	Lake Michigan	0+	0	1				
		Leuciichthys xenitheeus J. and E.							
May, 1927.....	12	Lake Superior near Duluth	⅛	0	1				
		Leuciichthys nigrippinis Gill							
May, 1927.....	12	Lake Nippigon, Ont.	1+	0	3				
May, 1927.....	12	Georgian Bay	0+	0	1				
May, 1927.....	8	Portage Lake, Washtenaw County, Mich..	0	0	0				

* Averages obtained by dividing the total number of plerocercoids by the total number of fish examined.
† Locality stated by local dealer from whom fish were purchased.

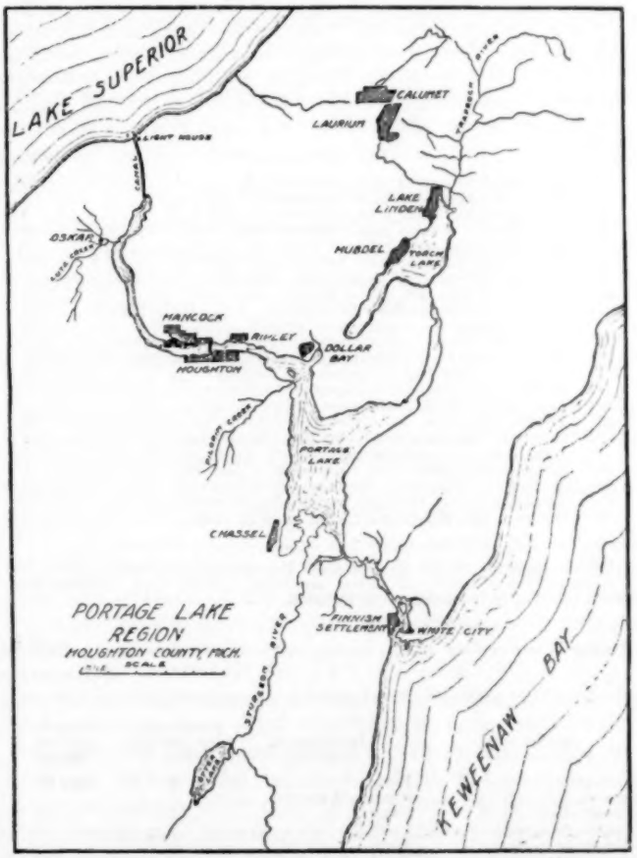
mature. Certain kinds of fish were examined, of which some individuals were infested with one or more bothriocephalid plerocercoids of other species than *D. latum*. The results of these examinations have been brought together in table 2. One of these species of plerocercoids was found in the burbot, *Lota maculosa* Le Sueur, from various localities, and another in the lake herring and in chubs, *Leucichthys* spp. The plerocercoids of these fishes and the feeding experiments performed with them are described in a later section of this paper. The results of our examinations of the fish of the Great Lakes appear to indicate that these fish do not carry plerocercoids of *D. latum*, and that consequently the commercial fish from these lakes are not a factor in the spread of the broad tapeworm. It must be pointed out, however, that our examinations covered only a few fishing areas, mostly in Lake Erie and in Lake Huron, and that the total number of individuals and species from any area is too small to yield adequate proof that plerocercoids of *D. latum* do not occur in the fish of the Great Lakes. We suspect that a low percentage of fish of certain species may be infested, especially near cities.

STUDY OF AN ENDEMIC AREA

Since plerocercoids of *D. latum* were not found in my examinations of fish from the Great Lakes, an investigation was begun of the only suspected endemic area in Michigan, the copper country in the Upper Peninsula, from which region it had been impossible to secure any fish for examination during the earlier part of the study. Because Warthin (1912) had reported the finding of plerocercoids in burbots taken from Portage Lake, Houghton County, all the species of food fishes that could be collected from Portage Lake and adjacent waters were examined. I found plerocercoids in the wall-eye, *Stizostedeon vitreum* Mitchill, in the sand pike, *Stizostedeon canadense-griseum* De Kay, in the great northern pike, *Esox lucius* Linnaeus, and in the lawyer or burbot, *Lota maculosa* Le Sueur, which by feeding experiments yielded tapeworms that were identified as *Diphyllobothrium latum*.

The species of *Stizostedeon* are highly important food fishes. In 1922, the last year for which data are available, the total commercial catch from the Great Lakes was 31,430,000 pounds.[4] *Esox lucius* is also of some commercial importance. The sandpike, the wall-eye and the great northern pike are prized by anglers. *Lota maculosa* is not a commercial species of food fish. At times it is caught in large numbers, especially on set lines, but is killed and thrown back in the lake because there is no market for it. In Houghton County, and probably elsewhere, however, it is caught and eaten in considerable numbers by Finnish anglers, who fish for it through the ice.

The results of the examinations of these species of fish and of the feeding experiments performed with the plerocercoids secured from them are summarized in table 3. This table also states the number of specimens of various species of fish examined from the same region which were not infested with plerocercoids of *D. latum*. It shows that plerocercoids of *Diphyllobothrium latum* were not found in other important food fishes, such as lake trout, herring, whitefish and perch. According to Schor,[5] the corresponding species of perch and whitefish in Europe, *Perca fluviatilis* and *Coregonus fera*, respectively, are common hosts of *Diphyllobothrium latum*. It is therefore the more interesting that, in twenty-seven perch taken from the same localities as the infested pike and in twelve whitefish from Lake Superior, plerocercoids were not found. Negative observations in so small a number of fish examined does not prove that plerocercoids of *D. latum* may not occur in these fish, but our records at least indicate that they are not common. Experiments should be performed to determine whether any other food fishes are capable of serving as hosts for plerocercoids of *D. latum*.



The Portage Lake region, Houghton County, Mich., an area where Diphyllobothrium latum occurs in the adult stage in man and in the plerocercoid stage in fishes.

THE PLEROCERCOIDS AND FEEDING EXPERIMENTS

The plerocercoids of *Diphyllobothrium latum* found in *Stizostedeon vitreum, Stizostedeon canadense-griseum, Esox lucius* and *Lota maculosa* are not encysted, and are found anywhere in the flesh, in adipose tissue among the viscera, in the gonads, and in the walls of the digestive tract. In the host, the body of the plerocercoid may be straight or it may have either or both ends folded back on itself. The scolex is inverted and is extruded only after prolonged exposure to water. The anterior end is marked by an invagination (the scolex withdrawn) and many deep transverse skin folds which posteriorly become further separated and less regular. The remainder of the surface is characteristically marked by irregular skin folds which decrease in frequence and depth toward the posterior end. The plerocercoids are more or less flattened and tapered toward the posterior end. There is no evidence of proglottid formation, either external

4. Koelz, W.: Fishing Industry of the Great Lakes: Appendix XI to the Report of the U. S. Commissioner of Fisheries for 1925, Bureau of Fisheries Document number 1001, 1926, pp. 553-617.

5. Schor, M.: Contribution à l'étude du Bothriocephalus Latus Brems: Sa distribution dans le canton de Vaud (Thèse de doctorat), Lausanne, 1932; Reviewed, Centralbl. f. Bakteriol. u. Parasitenk., 1903, ref., part 1, number 33, pp. 286-287.

or internal. The preserved plerocercoids vary in length from 1.24 to 29 mm. and in width from 0.57 to 2.22 mm.

In a few older individuals, deep constrictions were noticed that suggested the possibility of asexual reproduction. This idea is supported by the results reported by O. Fuhrmann.[6] The evidence at hand is not conclusive, and the subject requires further study. Asexual reproduction should not be thought on *a priori* grounds to be impossible in this species, because it is a common mode of reproduction in other sparganum forms.[7]

Several of the plerocercoids that I collected were fed, embedded in a piece of host tissue, to dogs and cats. Five dogs and one cat became infested. The dogs and originating in Germany and treated in Houghton County, one from a case in Detroit, and one in the collection of the pathology department of the University of Michigan (LAD 2823). Several fresh eggs from the broad tapeworm of the German patient referred to and from the tapeworms of my dogs were measured and the average, minimum and maximum measurements of the two groups were identical. The eggs under similar conditions hatched in the same lengths of time and the coracidia were also morphologically identical. The four other infested dogs are still living, and fecal examinations have revealed numerous eggs of *D. latum*, indicating heavy infestations. All the data in regard to the feeding experiments are given in table 4.

TABLE 3.—*Fish Examined from Portage Lake and Adjacent Waters, Upper Peninsula of Michigan, July 22-Aug. 22, 1927*

Number Examined	Fish * Examined	Number of Diphyllobothrium latum Plerocercoids Found: In Flesh	Among Viscera	Number of Uninfested Fish	Locality
79	Wall-eyed and sand pike, Stizostedeon spp.†	29	24	33	Portage Lake, between Hancock and Houghton
18	Wall-eyed and sand pike, Stizostedeon spp.†	7	4	7	Portage Lake, near Chassel
9	Wall-eyed and sand pike, Stizostedeon spp.†	3	8	0	Portage Lake, near Dollar Bay
32	Wall-eyed and sand pike, Stizostedeon spp.†	12	6	18	Portage Lake, near Oscar
1	Wall-eyed and sand pike, Stizostedeon spp.†	3	2	0	Lake Superior 20 miles from Portage Canal
14	Wall-eyed and sand pike, Stizostedeon spp.†	3	2	9	Lake Superior, ¼ mile from Portage Canal
2	Great northern pike, Esox lucius Linnaeus	1	4	1	Portage Lake, between Hancock and Houghton
14	Great northern pike, Esox lucius Linnaeus	15	20	3	Portage Lake, near Chassel
4	Burbot, Lota maculosa Le Sueur	0	1	3	Lake Superior, 4 to 10 miles from Portage Canal
27	Yellow perch, Perca flavescens Mitchill	0	0	27	Portage Lake
25	Common sucker, Catostomus commersonnii Lacepede	0	0	25	Portage Lake
21	Sturgeon sucker, Catostomus catostomus Forster	0	0	21	Portage Lake
5	Bullhead, Ameiurus m. melas (Rafinesque)	0	0	5	Portage Lake
1	Rock bass, Ambloplites rupestris Rafinesque	0	0	1	Portage Lake
14	Log perch, Percina caprodes-zebra Agassiz	0	0	14	Portage Lake
12	Spottail minnow, Notropus hudsonius-seline Jordan	0	0	12	Portage Lake
3	Cisco, Leucichthys artedi-tullibee (Richardson)	0	0	3	Portage Lake
5	Lake herring, Leucichthys n.-artedi Le Sueur	0	0	5	Lake Superior, ¼ to 4 miles from Portage Canal
28	Longjaws, Leucichthys xenithecus J. and E.	0	0	28	Lake Superior, 4 miles from Portage Canal
12	Whitefish, Coregonus clupeaformis Mitchill	0	0	12	Lake Superior, 4 miles from Portage Canal
26	Lake trout, Cristovomer n.-namaycush Walbaum	0	0	23	Lake Superior, 4 to 10 miles from Portage Canal
9	Brook trout, Salvelinus f.-fontinalis Mitchill	0	0	9	Lutz Creek, ½ mile from Portage Lake

* I am indebted to Dr. C. L. Hubbs for the identification of these fish.
† Later identification of saved specimen proved that Stizostedeon canadense-griseum and Stizostedeon vitreum had been examined promiscuously and that both species were infested.

TABLE 4.—*Feeding Experiments with Plerocercoids of Diphyllobothrium Latum Collected in Portage Lake Region, Upper Peninsula of Michigan*

Source of Plerocercoids	Location in Host Fish	Number of Plerocercoids Fed	Experimental Host	Date of Feeding	Date of Examination	Days Elapsed	Results
Stizostedeon spp.	Flesh	2	Dog 17	7/23	8/8	16	Autopsy, August 8, revealed eight specimens of D. latum as follows: with scolices 42 cm., 37 cm., 27 cm., 18 cm., 9 cm., 7.5 cm., 5 cm., 2.1 cm., and pieces without scolices totaling 16 cm.
Stizostedeon spp.	Flesh and viscera	8		7/25		14	
Stizostedeon spp.	Flesh	3		7/26		13	
Stizostedeon spp.	Flesh	3		7/27		12	
Stizostedeon spp.	Flesh	5		7/28		11	
Stizostedeon spp.	Flesh	10		7/29		10	
Stizostedeon spp.	Flesh	4		8/ 5		3	
Stizostedeon spp.	Viscera	26	Dog 18	7/20-8/13	9/9	48-27	Feces contain eggs of D. latum
Stizostedeon spp.	Flesh and viscera	12	Dog 21	8/13	10/10	58	Feces contain eggs of D. latum
Stizostedeon spp.	Flesh and viscera	6	Dog 22	8/18	10/ 8	51	Feces contain eggs of D. latum
Stizostedeon spp.	Flesh and viscera	13	Cat 20	8/9-8/15	9/27	49-43	Autopsy negative
Esox lucius	Flesh and viscera	26	Dog 19	8/5-8/18	9/20	56-43	Feces contain eggs of D. latum
Esox lucius	Flesh and viscera	6	Cat 23	8/18	9/27	40	Recovered one D. latum, 25.5 cm. long

cats used were purchased while still nursing, had never received fish as food, and were kept in pens under sanitary conditions. One dog was killed sixteen days after the first feeding, and one cat forty days after its feeding. From the small intestine of the dog, eight tapeworms were recovered; from the cat, one tapeworm. No other parasites were found. These worms were carefully compared with, and found to be morphologically identical to, *Bothriocephalus latus* as described by Leuckart,[8] and to three specimens of *D. latum* of human origin; namely, one from a case

The plerocercoids of the other two species can be distinguished at once from *D. latum* by their encysted condition; moreover, they were never found in the flesh. I have never found the plerocercoids of *D. latum* encysted nor have I ever found the others free. The plerocercoids of *D. latum* were most commonly found in the flesh and less commonly in the viscera.

The plerocercoids found in the several species of *Leucichthys* occur chiefly on the stomach, seldom on the intestine or other viscera. They are found in small spherical cysts varying from 0.5 to 1.5 mm. in diameter and are enclosed by the peritoneum usually of the stomach. The cysts may be closely applied to the stomach or suspended on a stalk of peritoneum; occasionally they occur embedded in the stomach wall. In rare instances, I have found them under the peritoneum

6. Fuhrmann, O.: Encore le cycle du Dibothriocephalus Latus, Rev. méd. de la Suisse Rom. **43**: 573-575 (Sept.) 1923.
7. Stiles, C. W.: The Occurrence of a Proliferating Cestode Larva (Sparganum Proliferum) in Man in Florida, Bull. 40, Hyg. Lab., U. S. P. H. S., 1908, pp. 5-18.
8. Leuckart, R.: Die Parasiten des Menschen und die von ihnen herrührenden Krankheiten, ed. 2, Leipzig and Heidelberg **1**, part 1, 1886.

covering the flesh and other viscera. Scar tissues visible in sections of the stomach wall are apparently due to injuries brought about by the penetration of procercoids. The average length of 100 plerocercoids from *Leucichthys* measured 8.15 mm. after fixation; their range in length was from 2 to 26 mm. They seldom exceed 1 mm. in width, being cylindric or only slightly flattened. The scolex is generally extended, and the deep bothria are plainly visible. Both scolex and body are very smooth, lacking the skin folds so characteristic of plerocercoids of *D. latum*. Some of the plerocercoids from *Leucichthys* spp. when fed in my experiments to dogs and cats developed into a species of tapeworm which, I am able to state beyond doubt, is different from *D. latum*. At a distance of 10 cm. from the scolex completely formed eggs were found in the uteri, while in a specimen of *D. latum* 10 cm. long the reproductive organs are entirely undifferentiated. The eggs are considerably smaller than those of *D. latum*. A description of this parasite will be given in another paper.

The plerocercoids found in and on the stomach wall of *Lota maculosa* occur in flattened circular cysts varying in diameter from 2 mm. to about 10 mm. They are coiled up and in general much larger than either of the other species of plerocercoids, reaching a length of 110 mm. and a width of 2 mm. Even when only 20 mm. long they may already have attained a width of 1.5 mm. They are considerably flattened. The scolex is much contracted and wrinkled; however, its bothria are visible. Feeding experiments with four dogs to each of which from four to thirty living plerocercoids were fed proved negative, making it impossible to examine and identify the adult worm. Because of the negative results of my feeding experiments and the characters of the plerocercoid, I am able to state positively that this species is not *D. latum*.

HUMAN INFESTATIONS WITH THE ADULT D. LATUM

While I was in Houghton County, one case of human infestation with *D. latum* came to my attention. The patient had come from Germany and was aware of his infestation before entering the United States. Another patient from whose feces I have examined eggs has recently been under observation at the new Thomas Henry Simpson Memorial Institute for Medical Research at the University of Michigan. Records of cases of tapeworms from the medical profession in Houghton County yielded unsatisfactory data, because in general the patient is treated; the worm is passed; the patient is satisfied, and generally does not follow the physician's advice to let him see the worm to determine whether the scolex is present. In order to determine the species of worm passed, it is necessary that the physician see the worm, but often he does not hear from the patient if the treatment appears to have been successful. Since treatment for *Taenia* and the broad tapeworm is the same, many medical men never attempt to determine the species. The physicians in the copper country give chenopodium, aspidium, thymol or pepo (pumpkinseed) emulsion, while kamala is much used by the Finns, who often treat themselves. The more important physicians there each recalled from ten to twenty cases of tapeworm in the last twenty years of practice, and in general they are agreed that tapeworms are not as common as they used to be. My records of examinations of fish also bear witness that the infestation at the present time is not heavy. My records dealing with the species of *Stizostedeon* show that sixty-six out of 153 examined (44 per cent) were uninfested with plerocercoids. Eighty-seven infested fish carried in all 103 plerocercoids, an average of 1.2 plerocercoids each. Of sixteen *Esox lucius*, twelve, or 75 per cent, were infested with plerocercoids of *D. latum*. These twelve averaged 3.3 plerocercoids each. On inquiry into the cause of the decline in the number of tapeworm cases in Houghton County, I learned that medical propaganda against the eating of raw fish has convinced at least the younger generation that the practice is unsafe, and now only the older Finns persist in it. One way in which the Finns eat raw fish is to serve it with sour milk, while fishermen eat fish raw with a sprinkling of salt after having removed the skin. The ingestion of any fish not thoroughly cooked may cause infestation. In the camps of summer residents and of hunters in winter, as well as in restaurants, fish is often prepared hastily, and even though well done on the surface may still harbor a living plerocercoid within. The plerocercoids are white, and sufficiently small to be overlooked by the unsuspecting eater.

SEWAGE DISPOSAL

The sewerage systems in Hancock and Houghton are ideal instruments for the speedy transportation of feces carrying broad tapeworm eggs to the lake. Hancock and Houghton are built on the high and steep hills bordering Portage Lake. Most streets running down hill toward the lake have individual sewer outlets opening directly into the lake. The inhabitants fish for the prized pike, *Stizostedeon*, near these outlets, and I have obtained several infested fish from these anglers. Since dogs, foxes and cats may also be infested either by eating viscera or raw flesh of fish, they too might be agencies in maintaining the life cycle of *D. latum*. If eggs arrive in water, they develop readily. I succeeded in raising the ciliated coracidia from eggs obtained from the feces of my infested dogs and of the German patient in ten days at room temperature in September.

SPREAD OF THE INFESTATION

This report leaves untouched the question of how infestations with *Diphyllobothrium latum* are acquired among the American born in various cities. As mentioned before, the infested fish may come from the Great Lakes. For control measures, it would be well to investigate thoroughly each known case of human infestation to determine the species and the source of the infested fish. The fish of the suspected areas should then be examined for the plerocercoids of *D. latum*. Resorters and hunters spending their vacations in endemic areas are in danger of carrying infestations away with them. According to the report of the United States Tariff Commission,[9] fresh, frozen, salted and smoked fish are imported from the fresh waters of Canada, of which Lake Winnipeg, Lake Manitoba, Lake of the Woods, Lake Winnepegosis, Lesser Slave Lake, Buffalo Lake, Lake Nipigon, and the Canadian side of the Great Lakes are the most important sources (p. 5). In 1924, the last year for which data are available, the commission found that 7,156,395 pounds of yellow pike or wall-eye, *Stizostedeon vitreum*, were imported into the United States (p. 52), nearly all of which were caught in the first four of these Canadian lakes and were shipped fresh, freezing having been prevented during the winter because the Jewish trade in the United States was willing to pay a premium for fresh wall-eyes (p. 53). In

9. United States Tariff Commission: Lake Fish, Tariff Information Series number 36, 1927.

connection with these statements, the observations of physicians in regard to the high percentage of infestation with *D. latum* among the Jews become significant, so that it is important and necessary that these imported fish be thoroughly examined for the plerocercoids of *D. latum*.

The great northern pike, *Esox lucius*, is caught mostly in Lake Winnepegosis and Lake Manitoba. The importation in 1924 amounted to 4,117,310 pounds. At least 80 per cent of the total amount of these and of the wall-eye consumed in the United States are imported from Canada. Both species have been found infested with plerocercoids of *D. latum*, so that the importance of examination of imported fish cannot be stressed too much. My records show that in Lake Superior some infested fish may be taken as far as 20 miles from Portage Canal. How much farther out infested fish may range is unknown, because fish have not been obtained for examination from more distant points. The dissemination of *D. latum* in fish in Lake Superior may be due in part to the indiscriminate deposition of feces in the waters of Lake Superior by infested fishermen, in part to water currents in Portage Lake, caused by eastern or western winds, which carry the eggs, coracidia, and the first intermediate hosts, microcrustacea, into Lake Superior, and in part to the migration of infested fish. The pike, *Stizostedeon*, and the burbot, *Lota maculosa*, travel from the Great Lakes up the rivers and inland lakes to spawn. *Stizostedeon* spawns in early summer; some remain in inland waters the year round, but most of them return to the Great Lakes after spawning. *Lota* spawns in early winter, and often does not return until the temperature of the water rises in spring. It is unlawful to take fish from inland waters for commercial purposes. In such waters, however, they may become infested with plerocercoids and after their return to the Great Lakes may be collected for the market. From my experience in the northern peninsula of Michigan, I have no doubt that not only there, but wherever in America the fecal material of immigrants coming from endemic areas in Europe enters lakes and streams by means of waterborne sewage or otherwise, one may expect to find fish infested with plerocercoids of *Diphyllobothrium latum*.

SUMMARY

1. Investigation has demonstrated that the broad tapeworm of man has become established in America.

2. The plerocercoid stage has been found in *Stizostedeon canadense-griseum* De Kay, *Stizostedeon vitreum* Mitch., *Esox lucius* L., and *Lota maculosa* Le Sueur. It was not found in *Perca flavescens* Mitch.

3. The Portage Lake region in the northern peninsula of Michigan with a considerable Finnish population is an endemic area from which infested fish range at least 20 miles into Lake Superior.

4. Fish taken from inland waters are not shipped commercially, and thus do not have any part in the spread of the infestation outside the endemic area with the exception of those caught and consumed by summer residents and other visitors. The movement of infested fish from Portage Lake out into Lake Superior brings these fish into the range of commercial fishing operations, and thus they may be a factor in the dissemination of the infestation in the territory to which fish from this region are shipped.

5. *D. latum* has been raised from the plerocercoid stage to the adult form in five dogs and one cat.

6. *Leucichthys* spp. from the Great Lakes are infested with another species of bothriocephalid plerocercoids, while *Lota maculosa* may be infested not only with the plerocercoids of *D. latum* but also with those of a third species of bothriocephalid not yet determined.

CARDIAC PAIN IN RHEUMATIC FEVER*

HOMER F. SWIFT, M.D.
AND
CHARLES H. HITCHCOCK, M.D.
NEW YORK

Many clinical observers of patients with rheumatic fever have noted that "heart pain" is a fairly common symptom, and most physicians appreciate the great frequency with which the heart is involved in this disease; but few, if any, statistical studies have been made with the object of correlating these two phenomena. It is our purpose in this communication to present the results of a study extending over several years to determine whether any such correlation exists.

The data have been collected as follows: Each day there has been noted on the temperature chart the existence of precordial pain and hyperesthesia during the entire period of each patient's hospitalization. Special features of these signs were recorded in the bedside notes along with other observations concerning the state of the heart. Frequent electrocardiograms have furthermore permitted us to detect abnormalities of heart action that might otherwise have been missed. The constant correlating of all these data on a single chart, together with other signs and symptoms of the disease, has led us to regard precordial distress and hyperesthesia as very significant of cardiac involvement.

The complaint of "pain in the heart" or "pain over the heart" is probably one of the most frequent symptoms encountered in general practice. It runs a gamut of intensity from the slight, almost negligible, precordial discomfort attending some emotional anxiety to the severe distress of coronary thrombosis. It doubtless has as causative factors not only pathologic conditions in the heart or aorta, but also abnormal states of the nervous systems, both cerebrospinal and vegetative. The association of altered cardiac sensation with grief or other psychic depression has been long recognized and called poetically a broken or heavy heart; likewise, the feeling of mental elation has given rise to the expression light-hearted.

In any study of altered cardiac sensation, therefore, the existence of such extraneous factors, entirely apart from the disease under investigation, must be recognized, and their relative importance in the production of symptoms must be evaluated. For instance, precordial distress and cardiac overactivity occurring coincidentally with menstruation in a woman with rheumatic fever should be discounted if the history reveals similar sensations accompanying the menstrual period during intervals of freedom from infection. On the other hand, it must be remembered that with catamenia one not infrequently observes relapses of a quiescent rheumatic fever; the occurrence of precordial symptoms together with other evidence of renewed activity of the rheumatic infection should under such circumstances be regarded as significant.

* From the Hospital of the Rockefeller Institute for Medical Research.
* Read before the Association of American Physicians, at the Forty-Second Annual Meeting, Atlantic City, May 3, 1927.

Similarly, the complaint of precordial distress in a patient who has previously suffered from the syndrome known as "disordered action of the heart" has less diagnostic significance than similar symptoms in a child unaware of the existence of this organ. In evaluating our observations, therefore, the history of the patient before the onset of his illness and the emotional balance of the individual we are studying must be taken into consideration.

The duration and intensity of precordial symptoms vary within wide limits. Occasionally, without a history of any discomfort previous to the time of examination, the physician will notice that the pressure of the stethoscope is not well borne by the patient, or that attempts to localize the apex impulse by palpation or to outline the cardiac borders by deep percussion cause him discomfort. Again, the patient himself may observe that when he lies in the left lateral position, with the precordium pressing on the bed, he becomes conscious of uncomfortable sensations over his heart, which are not experienced when the posture is changed. Such symptoms are, of course, to be considered as evidence of hyperesthesia over a portion of the cardiac Head's zone. Objective symptoms of this type are, however, much more rare than the complaint of cardiac pain or discomfort arising spontaneously during the course of the acute disease. In children, after a mild polyarthritis, the first indication of cardiac involvement may be discomfort over the left anterior portion of the chest, sometimes so mild as to escape mention unless especially inquired after, at other times so severe that the patient cannot rest without a sedative. In adults, on the other hand, the precordial symptoms usually do not occur until other signs of severe general infection have developed. The intensity of the symptoms arising from the joint involvement may be so great that the relatively milder cardiac pain may be overlooked unless the examiner is on the alert to detect it. In the polycyclic type of rheumatic fever there may be relatively little polyarthritis at the time of the relapses but much more severe cardiac discomfort; this perhaps indicates that a relative immunity of the tissues of the joints has been induced, while the heart is still being injured by the infection.

Generally, the discomfort is fairly well localized to the precordium and in many instances to the apical region, but at times, when more intense, it is referred to the shoulder, the left axilla and down the inner side of the left arm. In a few instances we have observed recurring pain in the left shoulder which was ascribed to persisting inflammation in that joint; but concomitant precordial pain with other evidence of active carditis led us to suspect that the shoulder pain was referable to a diseased heart, and our suspicions were confirmed by the disappearance of the shoulder pain with the improvement in the action of the heart.

In the presence of severe infection with evidence of profound cardiac involvement, the whole picture may resemble an attack of angina pectoris. In such instances there is usually a marked involvement of the aortic valve, undoubtedly with lesions in the adventitia of the aorta itself, as described recently by Pappenheimer and von Glahn.[1]

One rather characteristic feature of the precordial symptoms of rheumatic fever is their occurrence as a rule in the absence of physical exertion. There is, of course, hyperactivity of the heart as a result of the general intoxication, probably in association with some special involvement of the myocardium, but as a rule the cardiac pain arises without any externally ascribable cause.

In order to obtain some idea of the relation of precordial symptoms to the intensity of the disease, we have divided our cases into groups according to the most outstanding symptoms. In general, three large groups may be recognized: (1) those in which migratory polyarthritis is a prominent feature; (2) those in which subcutaneous nodules indicate the chronic, low-grade nature of the process, and in which the type of the patient's response to the infectious agent is chiefly proliferative rather than exudative, and (3) those in which carditis is an outstanding clinical feature. Obviously, each group contains cases that have some of the features of the other groups, but for the purposes of this study such a classification is of value. Group 1 has been subdivided into (*a*) the monocyclic type, in which the entire course of the polyarthritis, fever and other signs of active infection lasted only about two weeks, and (*b*) the polycyclic or continuous type, in which the infection lasted longer with a tendency for the joints to be reinvolved, or other signs of infection to reappear; often this reactivity showed definite cycles; at other times its course was irregularly continuous. This type has been further subdivided into subtypes, the first containing patients who were passing through their first attack of rheumatic fever and the second containing those who had had definite attacks before the one recorded at this time. In the group of patients with carditis, the designation "pericarditis recovered" is self explanatory; the cardiac group includes patients, admitted chiefly because of signs of active rheumatic cardiac disease, who recovered from the attack before discharge from the hospital. All the fatal cases were cardiac in nature, and include two patients with subcutaneous nodules, two with nodules and pericarditis, and three with pericarditis, who were not included in the other groups.

Naturally, in a study extending over seven years, a patient may have been admitted two or more times, and hence be classified first in one group and then in another. But such reclassifying was not done unless it seemed probable that the patient had recovered from his previous attack before being readmitted a second or subsequent time.

The number of patients in each group and the percentage with precordial symptoms is shown in chart 1. It is evident at once that the incidence of these symptoms increases hand in hand with the liability to cardiac involvement as indicated by the severity of the infection. Thus, 37 per cent of the ninety-six patients with polyarthritis had precordial pain or tenderness, while 80 per cent of fifty-eight patients with carditis or nodules had precordial symptoms. Here the nodule is included with the carditis because it is well known that patients with subcutaneous nodules practically always have cardiac involvement.

When the cases are considered by subgroups, the significance of precordial symptoms in relationship to cardiac involvement is still more strikingly brought out; there is a steady increase in the proportion of patients showing this symptom from the lowest for the monocyclic group to the highest for those with pericarditis.

In patients with nodules, pericarditis or signs of cardiac disease sufficiently severe to confine them to bed, there is little ground for argument against the signifi-

1. Pappenheimer, A. M., and von Glahn, W. C.: Lesions of the Aorta Associated with Acute Rheumatic Fever, and with Chronic Cardiac Disease of Rheumatic Origin, J. M. Research 44: 489 (Sept.) 1924.

cance of precordial pain as indicative of disease of the heart. In the patients with polyarthritis, on the other hand, additional evidence is required to convince the skeptic that this symptom is significant of cardiac involvement. This evidence may be divided into two categories: (1) objective, bedside signs pointing to some abnormality in the heart, and (2) instrumental, in our cases consisting of electrocardiograms.

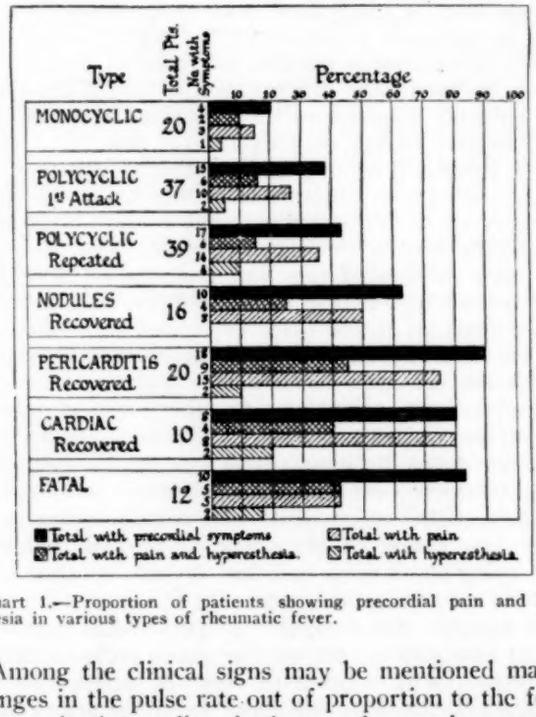


Chart 1.—Proportion of patients showing precordial pain and hyperesthesia in various types of rheumatic fever.

Among the clinical signs may be mentioned marked changes in the pulse rate out of proportion to the fever, changes in the cardiac rhythm or changes in murmurs. New murmurs may appear or murmurs previously present may disappear, diminish in intensity or become louder. The most frequent change in rhythm is the appearance of a marked gallop due to a diastolic extra sound which approximates the second sound in quality. Numerous ectopic beats are frequently observed. A partial heart block is fairly common, and may be suspected by the regularity with which a dropped beat can be detected. In three patients we have observed auricular fibrillation of several days' duration; all of them had pericarditis.

It is more convenient to get clinical evidence of cardiac involvement than to make instrumental examinations. At times the precordial symptoms are of only a few hours' duration; hence it may be impossible to take electrocardiograms. It has been more convenient to make these records as a routine twice a week than every time a symptom appears; therefore, in a number of instances in which there was precordial pain, simultaneous electrocardiographic tracings were not obtained.

Electrocardiographic evidence of cardiac involvement in rheumatic fever has been observed by a number of clinicians, and discussed fully elsewhere.[2] The alterations in the electrocardiogram which were used in the present study were: prolongation of the P-R time of 0.04 second or more, bundle branch blocks, numerous ectopic beats, distinct alterations in the directions of the T-waves, and significant changes in the Q-R-S complex.

2. Cohn, A. E., and Swift, H. F.: Electrocardiographic Evidence of Myocardial Involvement in Rheumatic Fever, J. Exper. Med. **39**: 1 (Jan.) 1924.

The relation of precordial symptoms to other signs of cardiac involvement in the forty-six patients with polyarthritis is shown in the accompanying table. Among these patients seventy-five distinct bouts of precordial pain were noted, and in two thirds of these there was either clinical or electrocardiographic evidence of cardiac abnormality occurring at the time of the bout. In one third of them, both types of evidence were recorded. No evidence of cardiac involvement was obtained in twenty-six of the attacks, but in twenty-one of these we detected within a few days or weeks definite evidence of such involvement; in three additional instances there were no observations during the period of pain, but later there were signs of cardiac abnormality. In only two patients with cardiac pain was there never any other evidence of cardiac involvement. In a large majority of cases, therefore, the precordial symptoms and cardiac signs indicated that the heart had been involved by the infection.

We have also investigated the relationship between cardiac symptoms during the acute attack and later signs of permanent injury to some portion of the heart. In general, permanent injury is most easily detectable in deformity of the valves giving rise to murmurs. Unless scars resulting from myocardial lesions are very numerous or situated so that they involve portions of the conduction system, they probably are not detectable until the tissue can be examined histologically. Clinical signs of bands of adherent pericardium are rare and difficult of interpretation. Scars of the valves resulting from verrucous endocarditis and rheumatic valvulitis, on the other hand, usually result in such malapposition of the leaflets that persistent murmurs are set up. Such murmurs, which we have interpreted as indicating valvular disease, have therefore been taken as signs of permanent injury to the heart. In many patients the slighter degrees of valvular deformity seem to have been stationary, and the patient has carried out his usual tasks without symptoms referable to cardiac insufficiency.

We have been able to follow the large majority (93 per cent) of our patients for periods varying between six months and six years, and have compared the relative frequency of permanent valvular injury in those having cardiac pain or hyperesthesia with those not having these symptoms during the acute fever. The results are presented graphically in chart 2. It is evident that, taken as a whole, the group of patients with precordial symptoms during the acute disease had a much higher proportion of permanently injured valves than did the group free from symptoms. The two groups were of almost the same size; hence the figures probably have real significance. All the subgroups except the small group with pericarditis showed the same tendency. Of special interest was the first attack

Correlation of Precordial Pain and Tenderness with Other Signs of Cardiac Involvement in Forty-Five Patients with Polyarthritis or Nodules

Number of attacks of precordial discomfort	75
Combined clinical and electrocardiographic evidence of cardiac involvement	24
Clinical evidence alone of cardiac involvement	21
Electrocardiographic evidence alone of cardiac involvement	4
No clinical or electrocardiographic evidence of cardiac involvement at time of pain, but later evidence of cardiac involvement	21
No observation at time of precordial pain, but later evidence of cardiac involvement	3
Never any clinical or electrocardiographic evidence of cardiac involvement	2

in the polycyclic group in which permanent valvular injury occurred three times as frequently in patients with precordial pain as in those without. Here one can be reasonably certain that the cardiac injury took place at the time of the acute fever and was not the result of injury inflicted in previous attacks. In this group, therefore, the occurrence of precordial symptoms seems to point to a more severe type of cardiac involvement.

If the group with polyarthritis is considered as a whole, the prognostic significance of precordial pain and hyperesthesia is well brought out. Seventy-one per cent of this group with these symptoms had permanent valvular disease, while only 33 per cent of the patients who were free of these symptoms had persistent signs of injury to the valves.

It is well known that patients with subcutaneous rheumatic nodules have a great tendency to severe carditis. While the number of our patients showing this syndrome may be too small for statistical treatment, still the results are in accordance with those of the other groups. If to the number here charted there be added four fatal cases in which severe precordial pain was noted and death resulted from cardiac failure, the proportion showing permanent cardiac complication and precordial pain would be brought up to 92 per cent.

It is doubtful whether the patients with pericarditis should be included in this tabulation, for it has been our experience that all such patients have severe acute cardiac disease. It is of interest that the two patients with pericarditis who recovered without subsequent evidence of valvular defect had, during their attack of acute pericarditis, a transitory auricular fibrillation which persisted for from ten to twelve days.

COMMENT

In few domains of medicine is there more controversial opinion than exists concerning the causation of cardiac pain. One reason for this lies in the necessity of approaching almost the entire subject through the medium of clinical observation, since it is obviously impossible to investigate many of its phases in anatomic, physiologic or pathologic laboratories. To attempt to elucidate any aspect of the problem by applying evidence obtained from the study of a condition as mysterious as rheumatic fever would seem to promise little save further to confound confusion. Yet if the subject must be finally settled by clinical investigation, it may be of value to apply the results of such investigations as they become available.

There can be little doubt that cardiac pain during the course of rheumatic fever points usually to involvement of some portion of the heart in the rheumatic process, for the parallelism is striking between the occurrence of this symptom and the presence of other evidence of rheumatic heart disease. Even though we may not understand fully the nature of the rheumatic process, sufficient evidence has been gleaned concerning its gross and minute evolution to enable us to formulate a satisfying theory of the manner in which the anatomic damage is wrought. Pain, however—the end-result in consciousness of the effect of an irritating stimulus on sensitive tissue—cannot be studied at the necropsy table, and morphologic analyses can do little more than supply hints which may be of value in formulating hypotheses. Such a hint is to be found in the characteristic perivascular and adventitial situation of the rheumatic lesion. As this lesion, however, is widely spread throughout the vascular system, it becomes necessary to examine individually the different tissues concerned with respect to their capacity to give rise to painful sensations. Particularly must we consider (1) the endocardium, (2) the myocardium, (3) the conduction system, (4) the epicardium and pericardium, (5) the coronary vessels, and (6) the aorta, especially its adventitial coat; any or all of these tissues may be involved during the course of acute rheumatic fever.

It must be admitted at the outset that our knowledge of the anatomy and physiology of the nerve supply to these structures is still in process of evolution, and that in consequence such conclusions as we may draw are in the main tentative.

The actual presence of nerve fibers in the adventitia of the coronary arteries has been a matter of knowledge for several decades,[3] and on the basis of morphologic differences it has been considered that at least two distinct functions are subserved by them. The presence of end-organs of a type usually associated with sensory nerves has led to the conclusion that one group of these fibers is concerned in centripetal conduction. Similar end-organs of the "sensory" type have been found in

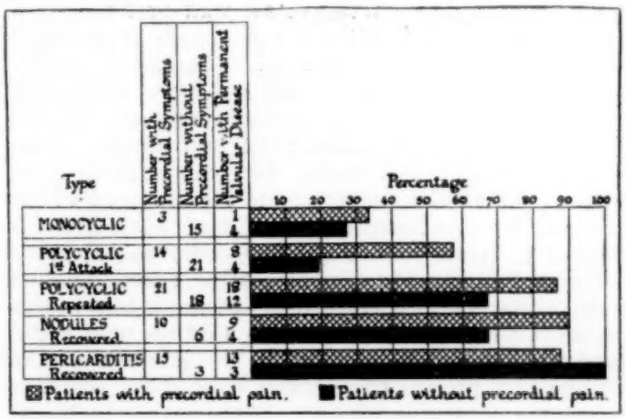


Chart 2.—Relation of pain during acute stages of rheumatic fever to later valvular disease.

the adventitia of the aorta [4] and in the pericardium.[3] To our knowledge, they have not yet been discovered in direct relationship with muscle fibers themselves. There are, therefore, well attested anatomic paths through which impulses could be conducted toward the central nervous system. But here the limitations of the method become apparent, and other types of evidence must be sought to demonstrate that these pathways are actually the ones concerned in the genesis of heart pain.

Recent investigations conducted in laboratories of physiology and experimental surgery have yielded valuable additions to our knowledge of the sensitiveness of the various tissues comprised within the vascular system. Odermatt [5] has adduced much evidence that arterial endothelium is insensitive to chemical irritation, and that only when the noxious agent is introduced into the adventitia are painful sensations produced. Similar results are reported by Müller.[6] Singer [7] has recently

3. Dogiel, A. S.: Die sensiblen Nervenendigungen im Herzen und in den Blutgefässen der Säugethiere, Arch. f. mikr. Anat. **52**: 44, 1898.
4. Schemmetkin, cited by Dogiel (footnote 3). Thoma, R., cited by Odermatt (footnote 5).
5. Odermatt, W.: Die Schmerzempfindlichkeit der Blutgefässe und die Gefässreflexe, Beitr. z. klin. Chir. **127**: 1, 1922, with full bibliography.
6. Müller, L. R.: Ueber die Sensibilität der inneren Organe, insbesondere des Gehirns, Verhandl. d. Kong. f. inn. Med. **37**: 48, 1925.
7. Singer, R.: Experimentelle Studien über die Schmerzempfindlichkeit des Herzens und der grossen Gefässe und ihre Beziehung zur Angina pectoris, Wien. Arch. f. inn. Med. **12**: 193 (Feb.) 1926; Experimentelle Studien über die Schmerzempfindlichkeit des Herzens und der grossen Gefässe und ihre Beziehung zur Angina pectoris, ibid. **13**: 157 (Sept.) 1926.

contributed largely to the problem by direct studies on the various tissues in question. Mechanical irritation of the endocardium or of the myocardium failed to arouse evidence of pain, and even the introduction into the ventricular muscle of as strong an irritant as ammonia water was likewise ineffectual. Application particularly of the latter type of stimulus to the epicardium or the pericardium was, however, immediately attended by the exhibition of pain. The coronary vessels were extremely sensitive to chemical or mechanical trauma, and when the same stimuli were applied to the outer coat of the aorta, the most marked pain responses resulted. Such observations leave little room for doubt that intense suffering may result from adequate stimulation of any portion of the adventitial tissue of the systemic vascular tree, whereas the available evidence points strongly to the insensitiveness of the muscle itself and of the endocardium.

Under pathologic conditions several types of stimulus may be considered as active. In any disease characterized by toxemia it is conceivable that the circulating noxium might reach the adventitial structures either by direct passage through the vessel wall or by way of the vasa vasorum, and there excite pain from direct irritation of the nerve terminals. The rôle of such a toxin [8] in rheumatic fever has not been sufficiently studied to permit us to pass final judgment on this point. But as to the existence of perivascular edema and infiltrations in this disease there can be no dispute; neither can there be question as to the adequacy of the inflammatory process to cause suffering when it exists in sensitive areas. Years ago Longcope,[9] in discussing the anginal attacks of syphilitic aortitis, called attention to the adventitial location of many of the lesions in this condition, and argued convincingly that the pain might with much reason be ascribed to the presence of the inflammatory process there rather than to the anatomic end-results of the condition. There seems to be no valid reason why the adventitial and perivascular exudative reactions of rheumatic fever, occurring both in the coronary arterioles and in the aorta, may not well give rise to disagreeable sensations and at times to acute anginal distress. The more widespread the lesions, in general, the more persistently and acutely will discomfort manifest itself, particularly in cases in which the highly sensitive aortic adventitia is implicated. This is borne out by the tables and charts here presented, showing that cases of the type in which such damage is most constantly wrought are exactly those in which this symptom is most frequently present.

The relation of pain to pericarditis deserves special discussion. It is our opinion that this pain is not due to the mechanical irritation of the rubbing of one roughened pericardial surface on the other, but rather to the intensity and nature of the underlying inflammatory process. Many clinicians have heard loud precordial rubs in patients who were entirely free from any sensation referable to the heart. Recent experimental observations have shown that the pericardium is insensitive to trauma by sharp instruments, and that the effective stimulus for pain production is rather the injection of an irritating substance or else the stretching of the tissue by mechanical means. Not infrequently, autopsy examination has revealed extensive purulent pericarditis in subjects who have never had precordial pain; nor were precordial friction rubs heard during life. Severe pain, on the other hand, may be present before there is any clinical evidence of pericarditis. Loeb [10] has recorded several cases in which precordial and epigastric pain were of such a nature that the diagnosis of perforated gastric ulcer led to laparotomy, and the true nature of the underlying cause was only revealed later, when unmistakable signs of pericarditis appeared. In several cases we have observed pain as severe after the disappearance of the friction rub as during its pressure. Rheumatic pericarditis is practically always accompanied by evidence of involvement of the valves and myocardium in the infectious process. In the presence of valvulitis and myocarditis of equal severity with freedom from pericarditis, one encounters similar precordial pain. It seems, therefore, that the precordial symptoms which have been described and attributed to pericarditis by many observers are merely indicative of the severity of the pancarditis.

One cannot, of course, lightly dismiss the myocardium from consideration, in view of the prominence it has long held in discussions of angina pectoris. To Mackenzie [11] we owe the concept that acute ischemia of the muscle resulting from coronary spasm is directly responsible for the acute agony of this condition, and in support of this idea he has marshaled a formidable array of valuable clinical observation. Nor has there been any lack of substantiating argument for this hypothesis, and parallels have been drawn particularly with the condition of intermittent claudication. The behavior of the muscles of an extremity following the interruption of the arterial blood supply by a compressing band has been studied and interpreted in favor of this concept. However, the idea has not gone unchallenged, and it has been argued that the pain arising in muscle, through which for any reason the free flow of blood has been hindered, is not necessarily the direct attribute of the ischemia.[12] Such factors as venous stasis, accumulation of metabolites, and arterial spasm have been regarded as primarily responsible, and the vascular adventitia rather than the muscle fiber has been indicted as the sensitive tissue. As already noted, direct irritation of the myocardium has failed to elicit evidence of pain. Acute ischemia of the myocardium, whether produced by ligating a coronary vessel or by injecting such materials as lycopodium spores or metallic mercury into the coronary circulation, has been unaccompanied by distress except such as was directly attributable to the trauma of handling the vessel.[12] Such considerations, in our opinion, render problematic the direct rôle of the muscle in the production of heart pain, and serve rather to strengthen our belief in the paramount importance of the perivascular and adventitial lesion as the nidus of irritation.

As to the paths followed by the centripetal impulses from the heart and aorta, experimental work [13] indicates that their course is to the stellate ganglions, and thence to the spinal cord via the rami communicantes of the eighth cervical to third dorsal nerves, inclusive. The constant reference of the painful sensations to the left chest is of some interest, as it may reflect the well known predilection of the rheumatic process for the left side of the heart. Observations indicate that it is through the left stellate ganglion alone that

8. Birkhaug, K. E.: Bacteriologic Studies in Acute Rheumatic Fever With Reference to Soluble Toxin Production, Proc. Soc. Exper. Biol. & Med. **24**: 541, 1927; J. Infect. Dis. **40**: 549 (May) 1927.
9. Longcope, W. T.: Syphilitic Aortitis: Its Diagnosis and Treatment, Arch. Int. Med. **11**: 15 (Jan.) 1913.
10. Loeb, R. F.: The Diagnosis of Acute Rheumatic Pericarditis, M. Clin. N. Amer. **9**: 455 (Sept.) 1925.
11. Mackenzie, J.: Angina Pectoris, London, Frowde, 1923.
12. Singer (footnote 7, first reference).
13. Singer, R.: Ueber die Schmerzempfindlichkeit des Herzens und der grossen Gefässe und ihre Beziehung zur Angina pectoris, Wien. Arch. f. inn. Med. **14**: 113 (March) 1927.

impulses from this side of the heart are transmitted. The mechanism of the final superficial distribution of the pain and hyperesthesia has been adequately considered by others, and need not concern us here.

SUMMARY AND CONCLUSIONS

The syndrome of precordial pain and hyperesthesia was often encountered in patients with rheumatic fever. The frequency of this syndrome was roughly proportional to the intensity of the rheumatic infection. It was found in a higher percentage of patients in their second or subsequent attack than in the first attack.

Two thirds of the patients with precordial pain presented concomitantly other evidence of cardiac involvement, and almost all of the remainder showed similar evidence of cardiac involvement some time during the period of infection.

A higher percentage of patients with precordial pain during the acute infection had permanent valvular injury than those who were free from pain.

While freedom from cardiac pain did not insure freedom from cardiac involvement, the great frequency with which the two were encountered together indicates that cardiac pain manifested by a patient with rheumatic fever should be regarded by the physician as a special indication for treatment calculated to safeguard the heart.

Sixty-Sixth Street and Avenue A.

THE TREATMENT OF NAUSEA AND CERTAIN RELATED CIRCULATORY SENSATIONS

PHARMACOLOGIC BASIS FOR THE THERAPY *

ROBERT W. KEETON, M.D.
AND
ESTHER S. NELSON, M.D.
CHICAGO

Our purpose in this paper is to discuss the control of nausea and certain closely related sensations. These sensations are variously described by patients as dizziness, lightness of the head, pressure in the head and neck, mental numbness and headache. They often appear associated with nausea, but frequently exist independently. In fact, an observing patient, even when questioned carefully, may be unable to relate such sensations to nausea.

The direct relationship to vomiting, however, has been shown by the senior author.[1] In the previous study, vomiting was divided into two stages, one of regurgitation in which the bowel contents are returned to the stomach, and a second one, of emesis, in which the stomach is emptied. These stages are separate and distinct. Each develops its sensory and motor pattern, and each may exist with or without the other. Further evidence of the participation of the duodenum and intestines in vomiting has been presented recently by Alvarez [2] and by Wheelon.[3]

Nausea was considered a sensation resulting from abnormal duodenal motor activity, most probably duodenal antiperistalsis. This view also has received support in a case report by Fitzgibbons.[4] The related sensations were considered phenomena secondary to the duodenal antiperistalsis, and were conditioned on the reflex spread of the stimuli into the cardiovascular fields. They were regarded, therefore, as of circulatory origin, but no attempt was made to analyze the mechanism further. It is well established that duodenal regurgitation of chyme occurs normally and is considered by some authors [5] important in reducing the gastric acidity of the interdigestive phase. When such a normal process exceeds a certain degree of vigor, it becomes pathologic. If, however, the receptive field is hypersensitive, then an antiperistaltic wave of normal vigor may function as a pathologic one and produce the sensation of nausea. If, on the other hand, the circulatory mechanism is abnormally unstable, as in the cases of so-called vasomotor instability (hyperthyroidism, menopause, dysmenorrhea, migraine and similar conditions) then a given antiperistaltic wave may induce circulatory sensations and the patient will complain of dizziness [6] or other related sensations. From such reasoning it can be seen that a patient may experience, without nausea, any one of the related sensations. In presenting this discussion, no apology is offered for outlining a therapeutic attack on a group of sensations, since it is quite important to extend comfort to a patient while a diagnosis is being made.

PHARMACOLOGIC BASIS FOR A THERAPY

The problem, therefore, is essentially one of treating certain phases of vomiting. Reference to any textbook of therapeutics or to the more recent articles by Fantus [7] and Desnoes [8] will show that a large number of drugs are available. The question is, Which of these should be selected? Three helpful generalizations may be made:

1. Since nausea and the related sensations originate from the same stimulus which spreads into different central fields, the treatment for all is essentially the same.

2. Duodenal motor dysfunction (antiperistalsis) must either be reduced quantitatively or be changed into analward peristalsis.

3. If the motor dysfunction (antiperistalsis) persists, then the reflexes concerned should be blocked off from their central connections. The maintenance of the dysfunction will then depend entirely on a peripheral mechanism.

For the establishment of an analward peristalsis, a cathartic seems to be indicated. This, indeed, is the usual treatment which the layman administers to himself; and when he secures relief by a bowel movement he assumes that he has had a "stomach headache." Unfortunately, when the symptoms are pronounced, the cathartic often induces emesis and aggravates the complaint. If relief is secured, then the repeated use of cathartics establishes a vicious cycle through their effect on the colon. The senior author [1] has demonstrated that a dilute (5 per cent) solution of disodium phosphate injected into the duodenum of a dog causes

---

* From the Department of Medicine, University of Illinois College of Medicine.

1. Keeton, R. W.: Nausea and Related Sensation Elicited by Duodenal Stimulation, Arch. Int. Med. **35**: 687 (June) 1925.
2. Alvarez, W. C.: Reverse Peristalsis in the Bowel: A Precursor of Vomiting, J. A. M. A. **85**: 1051 (Oct. 3) 1925.
3. Wheelon, H. K.: Radiographic Observations Following the Direct Injection of Barium into the Human Duodenum, J. A. M. A. **80**: 615 (March 3) 1923; Symptoms Associated with Duodenal Retention and Reverse Motility, J. A. M. A. **86**: 326 (Jan. 30) 1926.
4. Fitzgibbons, J. H.: Reverse Peristalsis Associated with Nausea, J. A. M. A. **85**: 1889 (Dec. 12) 1925.
5. Rehfuss, M. E., and Hawk, P. B.: The Interdigestive Phase or the Principles Governing the Phenomena of the Resting Stomach, J. A. M. A. **76**: 564 (Feb. 26) 1921.
6. At this point, the authors wish to distinguish clearly between the sensations under discussion and the rotatory type of dizziness which results from a lesion in the vestibular apparatus or its central communications. This type of vertigo is specifically excluded from the discussion.
7. Fantus, Bernard: Treatment of Vomiting, J. A. M. A. **81**: 17 (July 7) 1923.
8. Desnoes, P. H.: Seasickness, J. A. M. A. **86**: 319 (Jan. 30) 1926.

a peristaltic wave; a stronger solution (15 per cent) causes a regurgitation of duodenal contents. In keeping with this, it has also been found that in patients with a very irritable duodenum only the most dilute solutions of disodium phosphate could be injected without precipitating a wave of regurgitation and nausea. Lehman and Gibson [9] have advocated the oral administration of from 50 to 300 cc. of 2 per cent sodium chloride solution for vomiting. This, in reality, is a mild cathartic. One must therefore conclude that any cathartic which will prove helpful must be given in small doses and in dilute solution. A dilute solution of disodium phosphate meets this requirement.

TABLE 1.—*Inhibitory Effect of Sodium Bromide* *

	Bromide			Vomiting	
Dog	Dose, Mg. per Kilogram	Method of Administration	Food Relation	Interval in Minutes Before Apomorphine	Occurrence	Time in Minutes After Apomorphine
1	2.0	Oral in milk	Fasting	161	0	
2	1.0			158	0	
2	0.5			180	0	
1	0.5			120	+	5
2	0.25			130	+	9
1	0.5	Oral in milk	Food†	162	0	
2	0.25			162	0	
1	0.25			140	0	
2	0.12			143	0	
1	0.06			60	+	20
2	0.03			60	+	15
1	0.06	Intravenous	Food	93	+	9
2	0.06			96	0	

* Stimulating dose, apomorphine, 0.05 mg. per kilogram subcutaneously.
† Usual daily meal given four hours previously.

A second attack on the symptoms may be directed toward the disorganization of the reflexes involved in the antiperistalsis and toward limiting their central spread. It is not necessary to destroy the individual units of a reflex to inhibit its activity. On the contrary, such a destruction may be attended with considerable danger to the patient. Thus, ether, administered in quantities sufficient to break synaptic connections, induces the state of "surgical anesthesia"; when it is pushed to the abolition of the individual reflexes, the state of "bulbar paralysis." A drug which dissociates reflexes should therefore be chosen. In 1882, Albertoni [10] demonstrated that sodium bromide alone or combined with chloral possesses this pharmacologic action. He determined the minimal electrical stimulus when applied to the motor cortex of the experimental animal necessary to cause a generalized convulsion. He then showed that by the use of increasing doses of sodium bromide, or sodium bromide and chloral, the effect of the stimulation could be reduced to a convulsive twitching of one extremity or of the individual muscles of that extremity. More recently, Tatum and Collins [11] have shown that intravenous injections of soluble barbital U. S. P. (barbital sodium) and paraldehyde inhibit cortical convulsions induced by cocaine. This again is doubtless an instance of reflex dissociation. Hatcher and Weiss [12] have shown that the action of apomorphine in inducing vomiting was not due primarily to a stimulation of the vomiting center but to a facilitating and a sensitizing action on the reflex mechanism, so that normal stimuli could spread convulsively through it, inducing the vomiting storm. Its action on this organized reflex is analogous to the action of strychnine on the cord in producing convulsions of the skeletal musculature. Apomorphine would therefore render the spread of a stimulus easier and the radiations wider. The inhibition of vomiting induced by apormorphine should prove an excellent test for the efficacy of sodium bromide, soluble barbital or paraldehyde in causing a dissociation of the mechanism involved.

9. Lehman, E. P., and Gibson, H. V.: Observations in a Case of Jejunal Fistula, J. A. M. A. **82**: 1918 (June 14) 1924.
10. Albertoni, Peter: Untersuchungen über die Wirkung einiger Arzneimittel auf die Erregbarkeit des Grosshirns nebst Beitragen zur Therapie der Epilepsie, Arch. f. exper. Path. u. Pharmakol. **15**: 248, 1882.
11. Tatum, A. L., and Collins, K. H.: Acute Cocaine Poisoning and Its Treatment in the Monkey, Arch. Int. Med. **38**: 405 (Sept. 15) 1926.
12. Hatcher, R. A., and Weiss, Soma: The Seat of the Emetic Action of the Digitalis Bodies, Arch. Int. Med. **29**: 690 (May) 1922.

EXPERIMENTAL RESULTS

The minimal emetic dose of apomorphine was found in three dogs (of 25, 18 and 17 Kg.) to be 0.05 mg. per kilogram. This dosage was always effective throughout the experimental period, as was shown by repetitions of it and by failures of the experimental drug to inhibit its action. The inhibitory effect of sodium bromide may be easily seen by referring to table 1. It will be noted that the same dose of sodium bromide was more effective when given to an animal that had been fed than when given to a fasting one.

If the dosage shown in this table is applied to man, it will be seen that for a man of 132 pounds (60 Kg.) the emetic dose of apomorphine would be 3 mg. (one-twentieth grain), and the inhibitory dose of sodium bromide, from 4 to 7 Gm. (60 to 105 grains). This dosage of bromide is one that is not infrequently used clinically in cases of severe vomiting, over a period of twelve hours.

TABLE 2.—*Inhibitory Effect of Soluble Barbital, Paraldehyde and Atropine* *

		Time Interval, Minutes Between Injections of Drugs and Apomorphine	Vomiting		
Dog	Drug and Dose, Mg. per Kg.†		Occurrence	Latent Period, Minutes	Comment
1	Soluble barbital 20.0 Paraldehyde.... 20.0 Atropine..... 0.02	67	0	..	Slight unsteadiness
2	Soluble barbital 20.0 Paraldehyde.... 20.0 Atropine..... 0.02	63	0	..	Slight unsteadiness
1	Soluble barbital 20.0 Paraldehyde.... 20.0	95	Mild	20	Unsteadiness; flushing of nose
2	Soluble barbital 20.0 Paraldehyde.... 20.0	95	0	..	Unsteadiness; flushing of nose
1	Soluble barbital 20.0 Atropine..... 0.02	74	Moderate	15	
2	Paraldehyde.... 20.0 Atropine..... 0.02	72	Severe	5	
1	Paraldehyde.... 40.0 Atropine..... 0.02	67	Severe	7	
2	Paraldehyde.... 40.0 Atropine..... 0.02	63	Severe	13	
1	Soluble barbital 20.0	61	Mild	30	Unsteadiness; flushing of nose
2	Soluble barbital 20.0	60	0	..	Unsteadiness; flushing of nose

* Stimulating dose, apomorphine, 0.05 mg. per kilogram subcutaneously.
† Soluble barbital, paraldehyde and atropine were given intravenously; animals were fed the usual daily ration from four to five hours previous to experiment.

In table 2, the experiments with soluble barbital, paraldehyde and atropine in various combinations are summarized. In the first experiment, two cortical depressants (paraldehyde and soluble barbital) were combined with a peripheral acting drug (atropine). The results show a complete inhibition of vomiting.

The other experiments were planned to determine which was the effective agent. It is evident that this is soluble barbital. It should be noted that, following the administration of soluble barbital, the dogs developed a definite staggering gait. If this dose of 20 mg. per kilogram was given to a man of 132 pounds (60 Kg.), it would amount to 1.2 Gm. (18 grains). This is not a small dose for man.

CLINICAL EXPERIENCE

Paraldehyde.—Although paraldehyde did not show experimentally striking inhibitory effects on vomiting, it was used in three cases of nausea, arising presumably from widely different sources (nausea of pregnancy, nausea associated with a thyrotoxicosis, and nausea in a patient with myocarditis with low blood pressure and mental confusion). The drug was given as a retention enema in the form of an emulsion (4 cc. of paraldehyde to 30 cc. of the emulsion). When the emulsion was given, it was further diluted with either starch solution or water. In none of the cases was there rectal irritation. In each of the cases the nausea was made distinctly worse and was associated with actual vomiting some hours later.

Barbital.—Soluble barbital, although a valuable drug as shown by the experimental results, was not studied very extensively, because of its pharmacologic action. The toxic dose is extremely variable.[13] It is eliminated in the urine quite slowly as barbital,[14] so that with any impairment of kidney function an apparently safe dose may be converted into a toxic one. Finally, there is a certain habituation to the drug, which should not be neglected. The literature [15] shows that the barbital derivatives have proved valuable in the relief of nausea and vomiting associated with pregnancy, as well as nausea from other causes. In the few instances in which the drug was used, it seemed to be valuable in controlling the nausea, but the patients developed dizziness, one of the symptoms we were wishing to combat. It will be noted in table 2 that the dogs when standing showed definite unsteadiness and flushing about the nose, after the administration of soluble barbital alone or in combination with paraldehyde and atropine. If one is allowed to interpret this unsteadiness in terms of human experience, then the dogs also seem to have been dizzy. The very marked effect of phenobarbital in lowering blood pressure, slowing the heart, and dilating the peripheral arterioles has been reported by Gruber and his associates.[16] It is therefore evident that this drug is not entirely suitable for our purpose.

Bromide Ion.—This ion experimentally and pharmacologically seems to be an ideal drug for use in the cases under consideration. Therapeutic experience [17] has established it as the most dependable and least toxic of drugs used in the treatment of nausea. Consequently, its use was extended to the treatment of the related circulatory sensations. A number of patients were given doses of from 1 to 2 Gm. by mouth with indifferent results. When the dose was raised to 3 or 4 Gm., the symptoms could frequently be controlled. However, doses of this size are best given by rectum, which limits their usefulness in ambulatory patients.

Phosphate Bromide Powders.—A powder was then devised which contained 1 Gm. of disodium phosphate, 1 Gm. of sodium bicarbonate, and 1 Gm. of sodium bromide. This powder, when dissolved in 100 cc. of water and given on an empty stomach, modified the sensations in a surprisingly short time. It will be recognized that the bromide ion would dissociate the pathologic reflexes and the disodium phosphate would then reestablish the normal peristaltic rhythm. If the nausea was pronounced, the patient was asked to take only half a powder at the first dose. If necessary, a second and third dose could be repeated at forty-five minute intervals. In general, an increase above 1 Gm. of the disodium phosphate tended to make patients more nauseated and to cause emesis. When the "related sensations" were being treated, the phosphate was sometimes reduced to 0.7 Gm. and the bromide increased to 1.5 or 2 Gm. In practice, the sodium bromide was usually replaced by the "Triple Bromides" (a compound consisting of sodium, potassium and ammonium bromide in equal parts) because this preparation does not deliquesce so readily.

This powder has been in use for approximately four years and has given uniformly excellent symptomatic relief in a wide variety of conditions. In the milder cases of nausea of pregnancy, the powder is given forty-five minutes before each meal. In some cases of migraine, it has been possible to give one, two or three doses at forty-five minute intervals, lessening the headache and warding off the emetic phase. It has proved of great value in controlling the dizziness and pressure headaches in cases of nonulcerative colitis (irritable bowel) of undetermined etiology, and in colitis secondary to low grade pyelitis. It has been used a few times in acute exacerbations of blood pressure when the patient was disturbed by the dizziness and mental numbness attendant on the condition. These concrete illustrations will serve to show the usefulness of this powder which was derived from a study of the mechanism involved.

CONCLUSIONS

1. In treating nausea and the related circulatory sensations (dizziness, lightness of head, pressure in the head and neck, mental numbness, frank headache), duodenal dysfunction (antiperistalsis) must be reduced quantitatively or changed into peristalsis.

2. To accomplish this, the reflexes involved must first be disorganized or separated from their central connections. Then a mild cathartic will reestablish peristalsis.

3. Either the bromide ion or soluble barbital is effective in inhibiting these reflexes. After the administration of soluble barbital, the dogs showed unsteadiness of gait and flushing about the nose.

4. Clinically, the bromide ion is a more valuable drug than soluble barbital, because of its low toxicity and the absence of undesirable circulatory action.

5. A powder consisting of 1 Gm. each of sodium bromide, sodium bicarbonate and disodium phosphate meets the pharmacologic requirements for the treatment of the sensations under discussion. In practice, this powder has proved quite valuable.

1515 Howard Strect.

13. Sollmann, Torald: Manual of Pharmacology, Philadelphia, W. B. Saunders Company, 1926.
14. Fischer, P., and Hoppe, J.: München. med. Wchnschr. **56**: 1429 (July) 1909.
15. Roland, F. M.: Hyperemesis Gravidarum, Brit. M. J. **2**: 1490 (Nov. 24) 1906; Veronal, Merck's Reports, 1906, 1907, 1908, 1909. Barrett, N.: Sea Sickness, Brit. M. J., 1907, number 2448, p. 1593.
16. Gruber, C. M., and Baskett, R. F.: Effect of Phenobarbital and Sodium Phenobarbital upon Blood Pressure and Respiration, J. Pharmacol. & Exper. Therap. **25**: 219 (April) 1925. Gruber, C. M.; Shackelford, H. H., and Ecklund, A. M.: Effect of Phenobarbital on Blood Pressure in Arterial Hypertension, Arch. Int. Med. **36**: 366 (Sept.) 1925. Gruber, C. M., and Baskett, R. F.: The Points of Action of Sodium Phenobarbital and Phenobarbital in Lowering Blood Pressure, J. Lab. & Clin. Med. **10**: 630 (May) 1925.
17. Osborne: Principles of Therapeutics, Philadelphia, W. B. Saunders Company. Bastedo: Materia Medica, Pharmacology and Therapeutics, Philadelphia, W. B. Saunders Company.

HEREDITARY DYSTROPHY OF THE HAIR AND NAILS*

A. WILMOT JACOBSEN, M.D.
BUFFALO

A survey of the literature on rare anomalies of the skin and its appendages makes it evident that one of the rarest is congenital alopecia. Congenital dystrophies of the nails of the hands and feet are likewise very unusual. The association of these two defects as a hereditary condition has been reported in only four families. In this paper I record a fifth family group showing this condition. Two members of this family have been examined.

REPORT OF CASES

CASE 1.—B. B., a white girl, aged 7, seen in the outpatient department of the Children's Hospital of Buffalo, Dec. 31, 1926, was an only child. She had been delivered by cesarean section. She developed normally, and had measles, chickenpox, pneumonia and diphtheria, all with good recovery. The child was born without hair, but since birth there had been a sparse but steadily increasing growth of hair on the head.

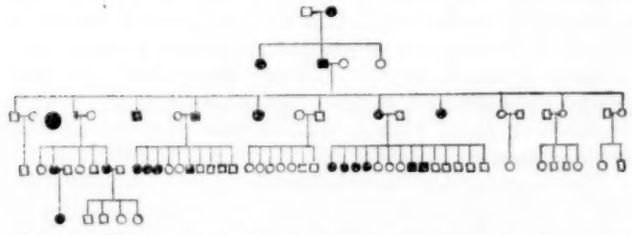


Fig. 1.—Pedigree of family here reported. The explanation of the symbols is given below.

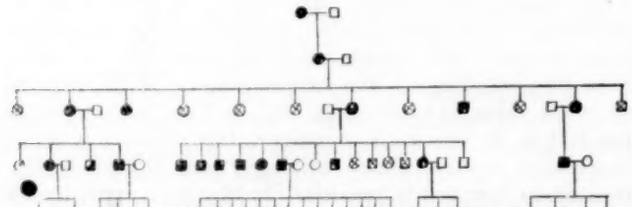


Fig. 2.—Pedigree of family reported by Nicolle and Halipré.

The patient was fairly well developed and well nourished, and was active and alert. She answered questions intelligently. The eyes appeared normal; the pupils reacted to light and in accommodation. There was a marked degree of myopia. The ears and nose were normal. There was a considerable amount of dental caries, but the teeth were normal in shape and arrangement. The tonsils were small. Except for palpable nodes at the angles of the jaw, there was no lymph node enlargement. The thyroid gland could not be palpated. The lungs were clear on percussion and auscultation. The heart was not enlarged, and no murmurs were heard. The abdomen and genitalia were normal. Neurologic examination did not reveal abnormalities. The skin was dry and rough and felt indurated, and there was a tendency to scaliness.

Fig. 3.—Pedigree of family reported by Eisenstaedt.

The nails of the fingers were brittle and atrophic. The lateral curvature was exaggerated and the longitudinal ridges were unusually well marked. The nails did not extend to the tips of the fingers, but became raised from the nail-bed and broken off about one-fourth inch from the ends of the fingers. They were brownish or black. The nails of the toes were similar in appearance except that there was a marked tendency to a horny hypertrophy, especially of the great toe-nails. At the base the nails were relatively normal, but at the free extremity they were raised by a horny thickening which caused them to project upward at an angle from the nail-bed. There was no paronychia or infection of the nail-beds.

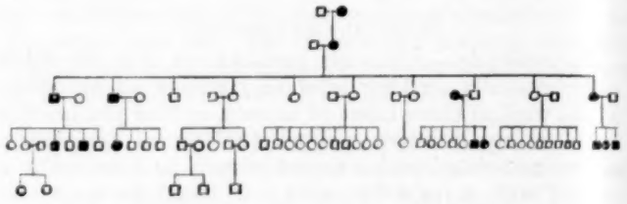


Fig. 4.—Pedigree of family reported by Barrett.

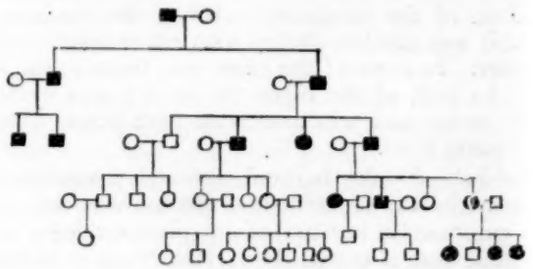


Fig. 5.—Pedigree of family reported by Jeanselme and Rimé.

The hair was very fine in texture and quite dry and brittle. It was sparsely distributed on the scalp, being almost absent in patches over the parietal regions. Its maximum length was 3 inches. The eyebrows were entirely lacking and the eyelashes consisted of only a few irregular short hairs. There was no hair whatever on the rest of the body. The blood Wassermann test was negative. The basal metabolism was plus 23 per cent.

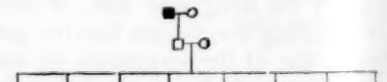
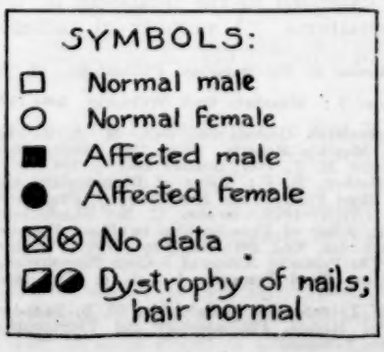


Fig. 6.—Pedigree of family reported by White.

CASE 2.—The mother of patient 1, aged 41, was small, well developed and well nourished. Her mentality was perhaps subnormal. The eyes were markedly myopic. The ears, nose and throat were normal. There were only six teeth remaining, all carious; three of these were upper incisors, abnormally widely spaced (no teeth had been extracted between them). The thyroid was not enlarged.

There was no general glandular enlargement. The heart, lungs and abdomen were normal. The skin was of normal texture and appearance. The nails of the fingers and toes were similar to those of patient 1, and there were several areas of infection about them secondary to trauma. The hair was very scanty over the scalp, was fine and downy in texture, and was a light blond. The maximum length was



* From the Children's Hospital.

1½ inches. The eyebrows and eyelashes were absent, and the remainder of the body was hairless.

ASSOCIATED ANOMALIES

In the reported cases of dystrophy of the hair or of the nails in both the hereditary type and in those which occurred as isolated instances, one finds mention of various associated anomalies. The teeth often show defective development.[1] They may be peculiarly

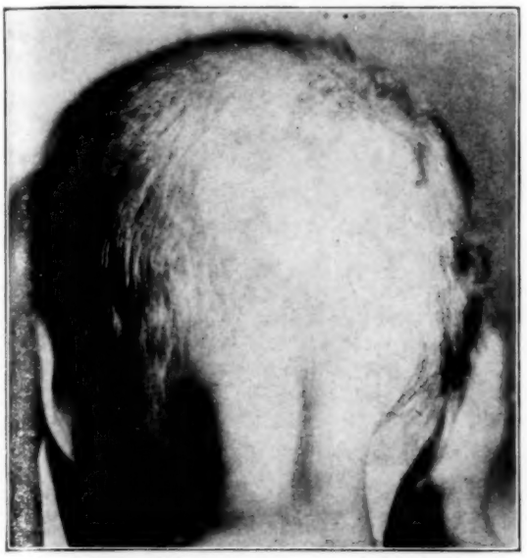


Fig. 7 (case 1).—Appearance of head.

shaped or oddly arranged, as in a double row, or simply prone to decay very early; they may be few [2] or even entirely absent, or present at birth.[3] Of the present cases the child showed marked dental caries, and the mother's teeth, which were widely spaced, were so carious that it was necessary to extract them. The child's maternal aunt lost all her teeth at the age of 11 years, and careful inquiry reveals that all affected members of the family had "bad" teeth.

Defective secretions are noted in some cases, such as absence of sweat [4] and tears, and inability to smell and taste.[2] In our family none of these defects are known to have existed.

Occasional anomalies of the eyes, such as cataract,[5] opaque patches in the retina, hyperopia [6] and strabismus,[7] are reported. In the present cases there is no history of these but both mother and child were myopic.

Stammering and other speech defects have been noted [8] in some of the reported cases. In this family, the mother informs me, many members have had more or less speech difficulty. She herself stammers when she becomes excited, and the daughter stuttered badly up to the age of 6 years.

Left-handedness, as in Tomkinson's family, and syndactylism, as in Hyde's cases, have not occurred so far as is known in this family.

Neurologic disorders, feeblemindedness and behavior abnormalities, which were so strikingly manifest throughout the large family reported by Barrett, have not been noted in our cases, nor can a history of nervous or mental disturbances in the other members of the family be elicited. It may be noted that the inheritance of these disorders in Barrett's family did not run parallel to that of the alopecia and nail-changes and may have been entirely unrelated to the latter. On the other hand, several affected members of Nicolle and Halipré's family were mentally defective.

In this heterogeneous list of anomalies, one characteristic is noted which is common to all; namely, that the structures involved, hair, nails, teeth, skin, the organs of special sense, and the central nervous system are all derived from the embryologic ectoderm. Thus the condition may be considered a congenital ectodermal defect.

HEREDITY

The condition of alopecia with alterations in the nails in this family is hereditary, as may be seen in the accompanying pedigree (fig. 1). Of the sixty-four members in five generations, twenty-two were affected. Of these twenty-two individuals, all had the typical dystrophy of the nails. Eighteen are said to have been entirely hairless or to have had only a small amount of short, downy hair, as in the cases reported here; four persons had a certain amount of normal hair in patches on the scalp. The unaffected persons are said to have been entirely normal. Both males and females may have the condition and both are capable of transmitting it, but in no case has a person, himself unaffected, transmitted it to his children. All persons that have the defect when crossed with normals give a mixed

Fig. 8 (case 1).—Appearance of fingernails

progeny.[9] Thus the character behaves as a mendelian dominant unsex-linked.

This type of heredity is seen in Nicolle and Halipré's family through six generations (fig. 2), in Eisenstaedt's [10] family through five generations (fig. 3), in Barrett's [6] family through five generations

1. Tompkinson, J. G.: Alopecia Areata and Strabismus; Familial Groups, Brit. M. J. **2**: 518 (Sept. 20) 1924.
2. Thurman, J.: Case Report, M. Chir. Tr. London **31**: 71, 1848.
3. Murray, F. A.: Congenital Anomalies of the Nails: Four Cases of Hereditary Hypertrophy of the Nail-Bed Associated with a History of Erupted Teeth at Birth, Brit. J. Dermat. **33**: 409, 1921.
4. Hutchinson: Hutchinson's Archives **10**, 1899.
5. Papastratigakis, C.: Un nouveau syndrome dystrophique juvénile, alopécie totale associée à la cataracte et à des altérations onguéales, Paris méd. **45**: 475, 1922.
6. Barrett, A. M.: Hereditary Occurrence of Hypothyroidism with Dystrophies of the Nails and Hair, Arch. Neurol. & Psychiat. **2**: 628 (Dec.) 1919.
7. Tompkinson (footnote 1). Nicolle, G., and Halipré, A.: Maladie familiale characterisée par des altérations des cheveux et des ongles, Ann. de dermat. et syph. **6**: 675 and 804, 1895.
8. Barrett (footnote 6). Harford, C. F.: Alopecia Areata and Strabismus: Familial Groups, Brit. M. J. **2**: 643, 1924.

9. Apparent exceptions to this statement may be noted in figures 1 and 5, in which in the fifth generation all of the children of three affected persons are seen to have been unaffected. The number of their progeny, however, one, two and four, respectively, is not large enough to admit the assumption that the affected persons would not transmit the condition if they had more children.
10. Eisenstaedt, J. S.: Three Cases of Familial Dystrophies of Hair and Nails, J. A. M. A. **60**: 27 (Jan. 4) 1913.

(fig. 4), and in the family with hereditary alopecia and fragile nails reported by Jeanselme and Rimé [11] through five generations (fig. 5). In a family with hereditary dystrophy of the nails but without alopecia in four generations reported by Tobias,[12] in a similar family reported by Pires de Lima [13] through two generations, and in a family with congenital baldness in three generations reported by Bazant and Gawalowski [14] the same rule obtains. The only exception occurs in White's [15] family (fig. 6), in which the defect was transmitted on one occasion by a man who himself was said to have been unaffected. As that author was unable to verify this fact by personal observation, and because it is the sole instance of the transmission of the character by an unaffected person, its authenticity may be questioned. Males and females are equally affected, the pedigrees of the families noted showing fifty-nine males and fifty-eight females with the defect.

A study of the pedigrees of the four families in which complete data are available makes it evident that among the children of affected parents the percentage

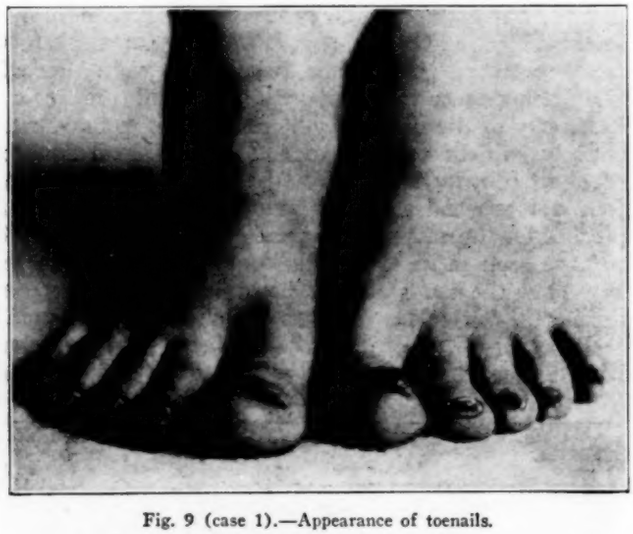


Fig. 9 (case 1).—Appearance of toenails.

of persons inheriting the condition is less with each succeeding generation. In other words, the condition tends to die out. This is true not only in regard to incidence but apparently also as regards severity. My patient (case 2), who has apparently a remarkably accurate knowledge of her family connections and who has furnished the data for the pedigree, informs me that it is common knowledge in her family that in earlier generations the affected persons had total alopecia with extreme malformations of the nails, whereas members alive at present have some hair, if only in the form of eyelashes or a lanugo-like growth on the scalp, and the nails are less severely involved.

It is a point of interest that the original report of this condition came from France [16] and that of the remaining four families (if that of Jeanselme and Rimé with alopecia but only slight nail changes is included) one is French [11] and two are of French-Canadian extraction.[17] The family reported here is of Franco-German origin.

11. Jeanselme and Rimé: Un cas d'alopécie congénitale familiale, Bull. Soc. franç. de dermat. et syph. **31**: 79-82, 1924.
12. Tobias, Norman: Hereditary Familial Dystrophy of Nails, J. A. M. A. **84**: 1568 (May 23) 1925.
13. Pires de Lima, J. A.: Onychatrophie familiale congénital, Ann. de dermat. et syph. **6**: 266-271, 1924.
14. Bazant and Gawalowski: Hypotrichosis Universalis Congenita, Ceska Dermatologie **1**, number 7, 1920.
15. White, C. J.: Dystrophia Unguium et Pilorum Hereditaria, J. Cutan. & Gen.-Urin. Dis. **14**: 220 (June) 1896.
16. Nicolle and Halipré (footnote 7).

ETIOLOGY

The etiology of these trophic disturbances of the nails and hair is highly uncertain. Careful study of the structures involved, both in my own and in the other reported cases, has excluded the presence of various mycotic organisms which are so commonly encountered in infections of the scalp and nails. There is no indication that syphilis plays a part. Certain physical changes noted in these patients are seen also in persons suffering from various endocrine deficiencies, notably hypothyroidism, and by some observers a causal relationship has been thought to exist. The possibility that a dysfunction of the thyroid gland may be responsible is suggested by Barrett. Two of his patients showed signs of hypothyroidism and improved under thyroid

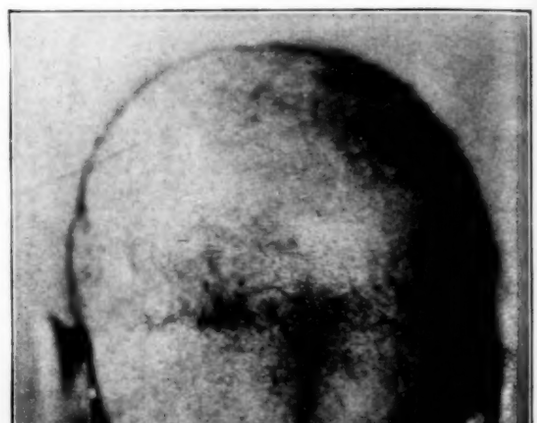


Fig. 10 (case 2).—Appearance of head.

Fig. 11 (case 2).—Appearance of fingernails.

therapy. Hoffman [18] records eight persons in four generations with scant eyebrows and brittle nails, two of whom had large strumas. Nicolle and Halipré could not palpate a thyroid gland in their patient and conclude that it was either absent or much atrophied. The well recognized changes in the nails and hair in cretins and

17. Eisenstaedt (footnote 10). White (footnote 15).
18. Hoffman, F.: Ueber Verkummerung der Augenbrauen und der Nagel bei Thyroidosen, Arch. Dermat. u. Syph. **89**: 381, 1908.

in children with myxedema, present in more than 75 per cent of these cases, and a certain amount of evidence that hypothyroidism may be directly inherited [19] add weight to the hypothesis that the thyroid gland may be at fault. Unfortunately, in none of the reported cases of hereditary alopecia with dystrophic nails is the basal metabolism recorded. In case 1, the basal metabolism was higher than normal, a fact that would seem to contraindicate treatment with thyroid extract. In view of the lack of satisfactory standards for children, however, and the consequent unreliability of basal metabolism tests on them, it might be advisable to give thyroid therapy a trial.

219 Bryant Street.

Clinical Notes, Suggestions and New Instruments

EXTENSIVE CUT-THROAT WITH COMPLETE LACERATION OF TRACHEA AND ESOPHAGUS

G. D. SCOTT, M.D., SULLIVAN, IND.

While many cases are reported of extensive laceration of the important structures in the neck, such as complete severence of the larynx, trachea and larger muscles, yet after an extensive search of the literature I have not found recorded a case of complete severence of both esophagus and trachea. It is for this reason that this case of complete severence of both trachea and esophagus is here reported.

Cathcart [1] reported a severe cut-throat in which the structures had been divided above the level of the hyoid bone down to the vertebral column. The main vessels were not cut, but one or both lingual and possibly the facial arteries had been divided. Tracheotomy was performed and two days afterward the parts were drawn together with mattress sutures of silkworm gut. The edges of the wound, however, became greatly inflamed and sloughed and the stitches had to be taken out. A fetid abscess of the lung or a pulmonary gangrene then developed, and for some days the man was not expected to recover. He coughed up through the tube quantities of extremely fetid pus. The condition, however, gradually improved. The wound healed slowly by granulation, and at the time of the report he breathed through the tracheotomy wound and fed himself through a small tube passed through the narrow wound opening. He could speak intelligently when he obstructed the tracheotomy tube and the cut-throat opening.

REPORT OF CASE

History.—A man, aged 47, was admitted to Sherman Memorial Hospital at midnight, June 30, 1925, because of an injury about one hour before in an automobile wreck in which his throat was cut by glass from the windshield.

When first seen he was in a sitting position on an ambulance cot with a large gaping wound in the middle third of the neck extending from the external borders of both sternocleidomastoid muscles. The wound was large enough to admit the fist. It extended in depth to the muscles covering the cervical vertebrae, presenting an enormous cavity.

On looking into this cavity it was seen that the trachea and esophagus were both completely severed between the first and second tracheal rings. The larynx was exposed and was drawn upward as well as the upper end of the esophagus. The lower end of the esophagus was retracted downward slightly below the manubrium. The trachea was also retracted downward to about the upper border of the manubrium. Both the right and the left carotid sheaths with their contents were completely exposed. The carotid arteries and jugular veins were not cut, although the left carotid sheath was cut, allowing the left carotid artery and the left internal jugular vein to bulge into the wound.

The patient apparently had little difficulty in breathing while in a sitting position or leaning slightly forward, although on attempting to lean backward breathing was almost impossible on account of coughing. There was some oozing hemorrhage, but it was not profuse. He was very pale, yet the pulse was of a good quality, ranging from 90 to 95 a minute, and he was apparently in but little shock.

Operation.—The patient was operated in a sitting position, as it was impossible for him to lie down. No anesthetic was used. The skin surrounding the wound was cleansed with alcohol and iodine. The wound, which contained numerous particles of dirt and cinders, was washed with sterile water. The esophagus was first united by interrupted number 2 chromic catgut sutures. The upper portion of the esophagus was apparently very thin walled. The mucous membrane in the lower portion had retracted downward quite a distance below the muscular coat. The muscular coat on the posterior wall was first approximated by interrupted chromic catgut. The mucous membrane of the posterior wall was next approximated with interrupted chromic catgut, the knots being tied

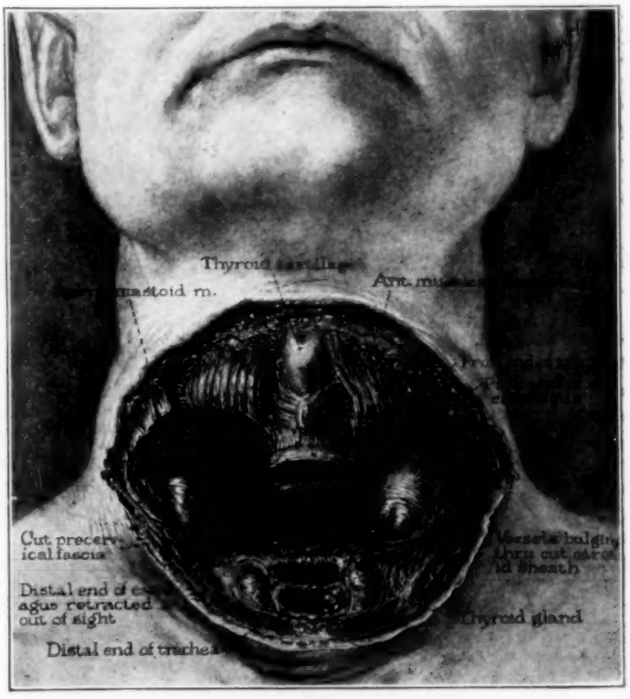


Fig. 1.—Extent of wound and structures divided.

on the inside of the lumen. The mucous membrane on the anterior wall was next approximated, the knots being tied external to the lumen, after which the muscular coats on the anterior wall were approximated in like manner. The deep fascia and the constrictor muscles of the esophagus were next approximated by interrupted chromic catgut. The trachea was next approximated and sutured, beginning on the posterior wall, the suturing being done with interrupted chromic catgut, the knots being tied outside the lumen. Approximation was carried around the trachea to the anterior wall, but just before the last four sutures were tied anteriorly a stab wound was made about one inch below the tracheal wound and a tracheotomy tube inserted, after which approximation of the trachea was completed. The carotid arteries and internal jugular veins were lying exposed from the upper portion of the thyroid cartilage to the sternum but were not cut. The recurrent laryngeal nerves were undoubtedly severed but were not identified. The isthmus of the thyroid gland had evidently been severed and lost.

Two cigaret drains, one on each side of the trachea, were inserted between the trachea and the carotid sheath. The

19. Hun and Prudden: Myxedema, Am. J. M. Sc. **96**, July and August, 1888. Howard, C. P.: Myxedema: A Study, J. A. M. A. **48**: 1226 (April 13), 1325 (April 20), 1403 (April 27) 1907.

1. Cathcart, C. W.: Severe Cut Throat, Tr. M.-Chir. Soc. Edinburgh **29**: 1901, 1909-1910.

platysma was sutured with interrupted chromic catgut and the skin sutured with skin clips.

During the operation there was apparently little pain except in the upper portion of the muscular layer of the esophagus, which when caught with forceps or stuck with the needle apparently caused some pain. There was apparently no pain when the trachea was sutured. When the tracheotomy tube was first introduced, it produced a spasm of coughing and rapid respiration. Sticking the finger down the trachea also produced reflexed cough and rapid respiration. The patient had evidently aspirated a large amount of blood and mucus into the trachea, which produced several attacks of coughing. He stood the operation well and had but little shock. Immediately on completion of the suturing the patient could whisper and asked for water. It was given to him and he was able to swallow. He complained that the water was too hot and was then given ice water, of which he drank about two glasses. There was no leakage around the drain on swallowing. No dressing was placed over the wound on account of the tracheotomy tube. The duration of the operation was thirty-five minutes.

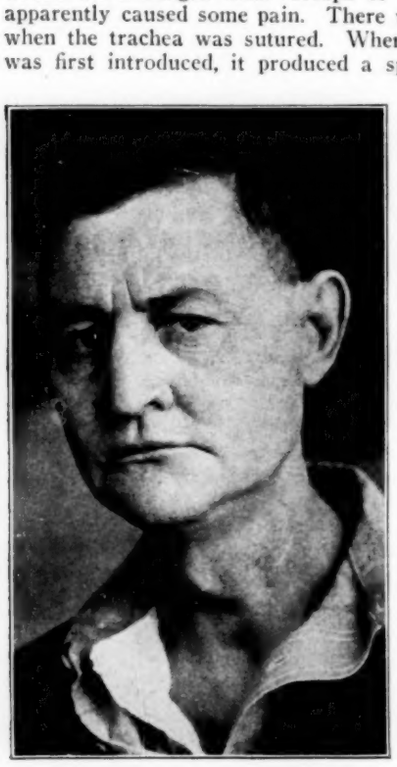


Fig. 2.—Appearance of patient after recovery, showing almost invisible scar.

Clinical Course.—The patient had a fair night following the operation and slept some, but on the following morning he could not swallow so well as immediatey following the operation on account of apparent swelling and pain. On account of coughing in the recumbent position he was placed in a sitting position.

Next morning, July 1, gastrostomy was performed under procaine hydrochloride anesthesia. This operation was performed with the patient in a semisitting position. He stood the operation well, but had more pain than he had from the suturing of the neck.

After the second operation the patient received nourishment through the gastrostomy tube, although he continued to drink water and broth by mouth. There was some oozing of the saliva through the drain openings in the neck for a few days. The drains were removed at the end of forty-eight hours. There was very little infection and the wound practically healed by primary intention. The patient could whisper but could not talk in a loud voice. He had the ordinary cough after any tracheotomy. Six days after the operation the patient removed the tracheotomy tube during the night. The following night he also removed the gastrostomy tube. He had no ill effects from either, and after removal of the gastrostomy tube he was fed entirely by mouth. Both gastrostomy and tracheotomy wounds healed within a short time. The patient left the hospital, July 27, twenty-seven days from the time of the accident.

Follow-Up Course.—Several weeks after discharge from the hospital the patient reported, complaining of difficulty in swallowing. He could swallow liquids but not semisolids. Esophageal bougies were introduced weekly for a period of three months, after which they were introduced every three or four weeks. The last introduction was nine months from the time of the operation, at which time he could swallow meat and other solid foods. After several months he began to talk aloud just a few words at a time. This gradually improved until at present he can talk for a short time in the normal voice, although it seems to require an effort. During November, 1925, the patient took a severe cold and it was thought he might have a mediastinal or lung abscess. Roentgen-ray films did not disclose either, and he soon recovered from this cough. He now has rapid respiration on slight exertion but otherwise is in fair condition.

COMMENT

This case demonstrates that end-to-end suture of the esophagus and trachea can be done without anesthesia, with but little pain, and with good results. It also demonstrates that gastrostomy is not necessary following end-to-end suture of the esophagus, as this patient continued to swallow liquids from the time of the anastomosis.

Although the recurrent laryngeal nerves were not identified at the operation they were undoubtedly severed, yet the patient talks in a loud voice.

The case also suggests a new method for a wide exposure of the esophagus in the neck. While complete severence of the trachea for the purpose of exposure of the esophagus may not be feasible, it is not impossible.

Sherman Building.

BIMALLEOLAR FRACTURES

BARCLAY W. MOFFAT, M.D., NEW YORK

Bimalleolar fractures, in my experience, are the most disabling fractures of the leg when improperly treated. In children it is sometimes possible to restore the anatomic relations and to maintain the position by the use of plaster. In adults, however, it is generally impossible since, though the fragments may be approximated under anesthesia, the pull of the stronger muscles will displace the foot when the patient regains consciousness. In the latter type, I believe that early open operation is indicated. The alternative treatment is traction applied to the foot either by the use of the Sinclair skate which is glued to the sole of the foot, or a plaster shoe, grasping the foot as does an oxford in which

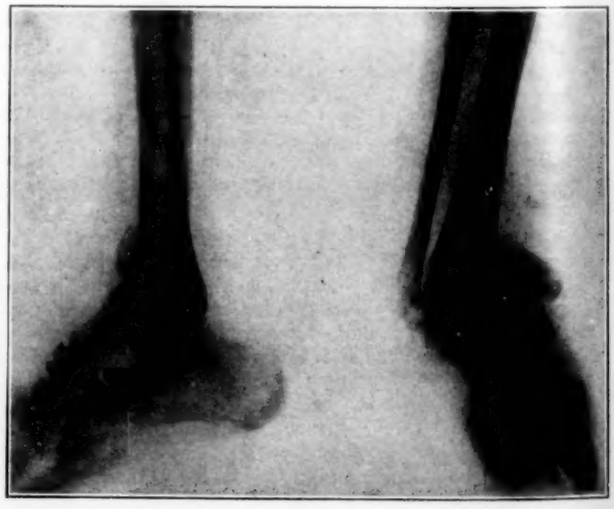


Fig. 1.—Typical case of bimalleolar fracture, showing severe deformity uncommon in this type of fracture.

have been incorporated straps for the fixation of weights applied by traction.

The difficulty of the latter methods is that, in all ankle fractures, marked inversion of the foot must be maintained in order to crowd the body of the astragalus against the internal malleolus and to hold the external malleolus firmly against the lateral face of this bone; otherwise there will be a widening of the mortise, allowing rotation of the astragalus on its vertical axis, resulting in a severe flatfoot. It is

difficult to see how by traction the foot may be inverted and crowded to the inner side of the leg without displacing the inner malleolus and thus dislocating the foot inward.

The operation which I have found most serviceable in the treatment of this condition is fixation of the internal malleolus by the use of the Gallie beef bone screw. The operation is simple and, unlike the use of plates or metal screws, does not involve the introduction of a foreign body which

Fig. 2.—Appearance of same fracture after operation, showing restoration of mortise and inversion of the foot.

may cause absorption of the bone along its tract. The technic of the operation is simple. An incision anterior to the inner malleolus is carried through to the bone. The fragment of the internal malleolus is replaced on the tibia. A hole the diameter of the screw is drilled through the length of the malleolus slightly obliquely, so as to secure a good hold in the tibia. This drill hole is then tapped with the instrument provided in the bone screw outfit, and the screw twisted in drawing the malleolus tightly into place and providing a firm abutment against which the astragalus may be placed without danger of inward displacement of the foot. As a rule it is not necessary to fix the external malleolus, inversion of the foot being sufficient to draw it in line and to maintain it in this position.

The difficult cases are those in which reduction by manipulation has been attempted and no attempt made to fix the fragment. In these cases there is severe atrophy of the bones, which are cancellous in structure. The cortex becomes so soft under these circumstances that it is impossible to maintain the fragments by the use of the screw and it becomes necessary to chisel off the malleoli and secure approximation by suturing with a sharp needle and chromic catgut. When the malleoli have become united in their normal position and before the union has become solid, the mortise may be molded into proper conformation. The patient should be encouraged to walk in his plaster with the foot in inversion, when a solid union may be obtained with the anatomic relations approximately correct.

The difficulty and duration of treatment in neglected cases are sufficient argument in favor of early open operation in those cases in which approximation of the fragments cannot be maintained by immobilization in plaster.

CONCLUSIONS

1. Roentgenograms should be taken immediately after an attempt to reduce bimalleolar fractures by manipulation, and if a relapse has occurred open operation should be done regardless of the amount of swelling of the soft parts.

2. The neglected cases offer a poor prognosis and open operation is the only treatment possible.

3. The operation of choice is the use of the Gallie beef bone screw.

163 East Thirty-Sixth Street.

SPONTANEOUS RUPTURED UTERUS

J. OGLE WARFIELD, JR., M.D., WASHINGTON, D. C.

This case is a particularly interesting one, and although I attended the patient only during her last illness, I have briefly summarized her former obstetric experiences because of their rarity.

REPORT OF CASE

A white woman at the age of 23 was delivered of her first pregnancy, in April, 1918, by cesarean section, because of eclampsia. The child was normal but died six months later of pneumonia complicating pertussis. Further details in regard to this pregnancy and operation were unfortunately not obtainable.

In September, 1921, she came to the dispensary and was found to be from three and a half to four months pregnant. The pelvic measurements were within the normal limitations and she had no particular complaints. Subsequent visits twice a month showed that she suffered with dyspnea, orthopnea and edema of the ankles due to cardiac fibrillation, which condition was improved by rest, restricted diet and a course of digitalis. She had no acute abdominal pain during pregnancy. December 25, she was admitted to the hospital. She had had irregular abdominal pains simulating labor pains for twelve hours and some bloody vaginal discharge. The fetus was determined to be of normal size in the left occipito-anterior position with its head floating and its heart distinctly heard in the left lower quadrant. By rectal examination the cervix was closed and no fetal part presented in the pelvis. During the afternoon the intermittent pains became continuous and general over the abdomen. The mother's pulse became irregular and with less volume. She became pale, and the abdomen was generally very tender without rigidity. The slight vaginal bleeding persisted. The fetal heart was not audible. It was thought that she had a prematurely separated placenta with concealed hemorrhage and that the absence of abdominal rigidity was due to the vaginal bleeding. An imme-

Uterus, showing the crater-like rupture in the fundus.

diate laparotomy revealed a full term abdominal pregnancy. The peritoneal cavity contained some old blood and a normally developed female child of 8 pounds (3.6 Kg.), which had been dead several hours. The child and its sac were removed. The placenta was of normal size and inserted on the posterior uterine surface, the posterior layers of the broad ligaments mostly on the right side, and about one third of it on the anterior parietal peritoneum, so that it was divided when the abdomen was opened. The placenta was not removed and drains were inserted. A transfusion was given. Convales-

cence was stormy as the result of loss of blood, shock, nausea and abdominal distention. As the umbilical cord and placenta sloughed away, they were removed by means of a proctoscope inserted through the drainage tract. A mild left femoral phlebitis also developed. After a stay of seven weeks she left the hospital with the incision entirely healed.

In January, 1923, the patient was again admitted to the hospital for three days complaining of sterility. At this time a Rubin's test and curettage was done. A cervical stenosis was thoroughly dilated and the tubes were patent within normal limits of gas pressure.

The patient returned to the dispensary in December, 1924. She was normally two months pregnant with no unusual or alarming symptoms. She was closely watched during the pregnancy, which progressed normally and without cardiac disturbance. At the end of the eighth month she was suddenly awakened one morning at about 5 o'clock with a violent, sharp epigastric pain. A near-by physician administered morphine and advised that she go to the hospital. She did not enter the hospital, however, until 9 o'clock. During the interval the pain continued to be very severe, with nausea and vomiting, the abdomen became generally sore and tender, and the patient complained of shortness of breath, weakness, thirst, faintness and free perspiration. I was called to see the patient immediately on admission to the hospital. She was rather drowsy and nauseated; she was very pale; respirations were quite rapid, shallow and entirely costal; the skin was cold and clammy; the pulse was very rapid with low tension and volume, and the systolic blood pressure was 90. The abdomen was distended, particularly in the upper half, with absence of respiratory movements and generalized rigidity and tenderness, especially in the median line just above the umbilicus. A large abdominal mass, apparently the uterus, was definitely palpated. The fetal outlines could not be determined, but the fetal heart was just above the umbilicus. Rectal examination revealed nothing important. Spontaneous rupture of the uterus was diagnosed. All methods of stimulation were employed and transfusion necessitated venesection. The veins of the arm were collapsed and very difficult to find. Immediate laparotomy showed the peritoneal cavity full of blood with clots. A premature, dead, 6 pound (2.7 Kg.) male child of normal appearance was lying free in the upper peritoneal cavity. The placenta and membranes were protruding half way through a large, ragged, ruptured opening in the uterine fundus and had prevented the uterus from contracting. The child and placenta were quickly removed and a hysterectomy was done. The patient's condition improved slightly after transfusion, but she died about half an hour after operation.

The pathologic examination showed a hardened uterus measuring 12 by 11 by 8 cm., which had been amputated through the very uppermost portion of the cervix, and a normal left tube and ovary. The uterine fundus presented a crater-like area of rupture, 8 cm. in diameter at its external border, with irregular everted margins. Anteriorly it terminated at the upper end of a midline scar which extended 3 cm. downward on the anterior uterine surface, terminating 6 cm. above the line of amputation. The scar was irregular, with several transverse elevations, separated by corresponding depressions, the deepest of which lay 5 mm. below the general surface. On uterine section, the walls were thick and the uterine cavity well contracted with the placental site posterior. The free surfaces were covered by decidual tissue with adherent villi. The latter extended far down into the muscularis and in great part lay in the lumen of partially obliterated vessels. There was an unusual invasion of the muscle by fetal elements and unusual obliteration of vessels. Except for vacuolization of the protoplasm, the muscle fibers appeared normal. In many of the smaller veins there was an excessive number of leukocytes, and in places strands of leukocytes extended along the course of small lymphatics.

CONCLUSION

It is needless for me to outline in detail the treatment for abdominal pregnancy and ruptured uterus. Early operation is essential, and various methods of stimulation should be used as indicated. In the former condition, the placenta must not be removed from its attachment at operation for fear of hemorrhage, and in the latter a hysterectomy is necessary to control hemorrhage. In cesarean operation the place of election for the uterine incision is the median line of the anterior uterine wall. The fundus is a weak place because of its thinning out and extensibility during pregnancy.

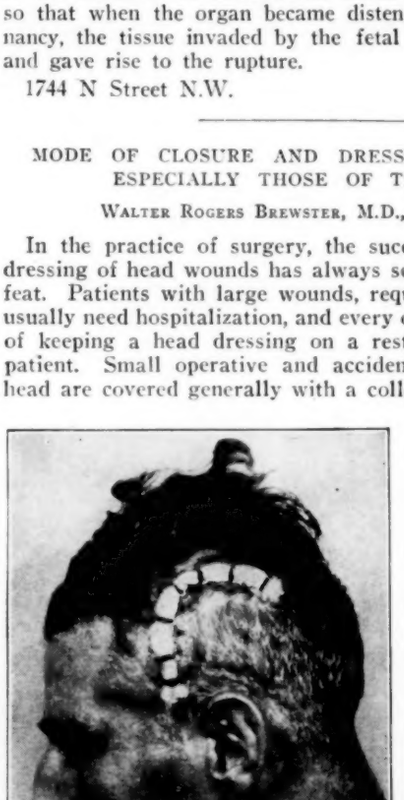
In this case, though it cannot be proved, it seems likely that the healing of the previous cesarean section incision in the upper and fundal part of the uterus was faulty, in that it led to the inclusion of endometrial tissue in the muscular wall, so that when the organ became distended by the new pregnancy, the tissue invaded by the fetal cells and villi yielded and gave rise to the rupture.

1744 N Street N.W.

MODE OF CLOSURE AND DRESSING OF WOUNDS, ESPECIALLY THOSE OF THE HEAD *

WALTER ROGERS BREWSTER, M.D., NEW ORLEANS

In the practice of surgery, the successful bandaging and dressing of head wounds has always seemed to me a difficult feat. Patients with large wounds, requiring large dressings, usually need hospitalization, and every one knows the difficulty of keeping a head dressing on a restless or uncontrollable patient. Small operative and accidental wounds about the head are covered generally with a collodion dressing (which is difficult and painful of removal), or the entire head is swathed in bandages, much to the discomfort and dismay of the patient desirous of going about his usual duties.



Appearance of patient; clip retouched for contrast.

In the handling of quite a number of patients suffering with head wounds, the dressing presented in the accompanying illustration has been evolved, and, with it, the mode of closure, thus making the closure and dressing all part of the same technic.

Since it was first used it has been tried many times and has proved most satisfactory, being easy of application, permanent when once placed, not excessively decorative in its scheme, and easily removable.

An account of the patient here illustrated will suffice to describe the dressing and its application:

M. S., a man, was struck on the head, Oct. 20, 1926, by a steel plate. The wound extended through the periosteum, exposing the bone and freeing the insertion of the temporal muscle. In closing, the periosteum was sutured and the insertion of the muscle replaced with absorbable material, several silkworm sutures being used to approximate the wound edges, which were then brought together accurately with large Michel clips.

Under the arch formed when these clips are bent in place, an open sponge is passed by means of a probe. It is then spread between the clips to cover the wound, the ends cut smooth, and the dressing is complete. Moreover, it will not move unless the clips are pulled out of place, and this procedure is painful and difficult enough to deter the patient from attempting it.

The slight serous oozing from the wound is absorbed by the gauze and dries, and the wound is entirely sealed. From the fifth to the seventh day, the dressing is removed by

* From the Department of Surgery, Tulane University of Louisiana School of Medicine.

straightening the clips in the usual way. The gauze will be found to be stuck, and may be left to fall off or be soaked off by the patient. The sutures, if any have been used, are removed in the customary manner.

Any infection or swelling may be easily seen and readily dealt with, since the dressing covers only the wound itself, leaving the surrounding area exposed. Any part of it may be removed by cutting out the desired section of gauze and by removing the clip.

Though I have employed this technic only in head wounds, there appears to be no reason why it should not be applied satisfactorily elsewhere on the body.

A NEW RETENTION CATHETER AND STILET

WILFORD A. H. COUNCILL, M.D., BALTIMORE

For a number of years I have keenly felt the need of a retention catheter which will combine the requisite features of (1) easy and safe insertion in the most difficult cases, and (2) positive retention of the catheter without the unpleasant circumstances usually found in our present methods.

There have been various types of catheters devised which serve their purpose very well in the usual run of cases, but unfortunately certain pathologic conditions at times present themselves, making the insertion very difficult and sometimes impossible. Especially is this true in contracture of the

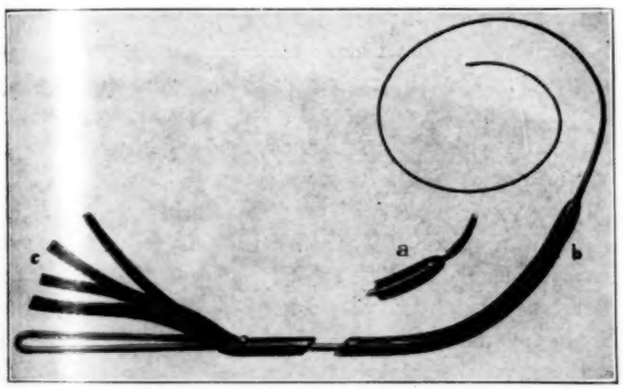


Fig. 1.—Retention catheter and stilet with filiform attached: *a*, cross-sectional view of catheter, showing how olive prevents stilet from being pushed through reinforced tip, with screw attachment for filiform; *b*, lateral eyelets; *c*, retention flaps.

vesical orifice when dealing with carcinoma, rupture of the urethra and some benign prostatic hypertrophies.

Heretofore the greatest aid that we have had for the introduction of a catheter has been the stilet, but this has not proved to be entirely satisfactory. Occasionally we come in contact with cases in which passage even with this aid is impossible, and it is with this type of case that undue force often results in the stilet being pushed through the tip or eyelet of the catheter, causing considerable trauma and possibly a false passage. In seeking to obviate this accident I have devised a catheter and stilet with a filiform attachment, which when used conjunctively facilitates the introduction of the catheter and minimizes the amount of trauma.

THE CATHETER

The catheter is of the soft rubber variety with a reinforced tip through which has been made a hole for the passage of a filiform (fig. 1 *a*). Laterally there are three eyelets (fig. 1 *b*) to insure better drainage, and at the proximal end are four flaps (fig. 1 *c*) which, when made fast to the penis, as seen in figure 2, embodies a new idea for a retention catheter.

THE STILET

The usual type of stilet has been used with the following change: At the end is an olive to prevent the stilet from being pushed through the tip of the catheter (fig. 1 *a*), and a screw three-eighths inch long for the attachment of a filiform.

TECHNIC

1. Surgical cleanliness is observed.
2. The catheter is threaded over the stilet until the screw protrudes through the hole in the tip.
3. The urethra is ballooned with oil and the filiform is passed into the bladder.
4. The screw of the stilet is attached to the filiform and the catheter is passed into the bladder.
5. The stilet is withdrawn through the catheter with the filiform intact.
6. The flaps are turned back over the penis and attached with three strips of adhesive tape (fig. 2).

To keep the operative field dry, it has been my custom to use a conical plug (fig. 2 *c*) in the end of the catheter, and in cases in which permanent drainage is desired, to insert a cannula (fig. 2 *b*) with a rubber tube attachment (fig. 2 *d*).

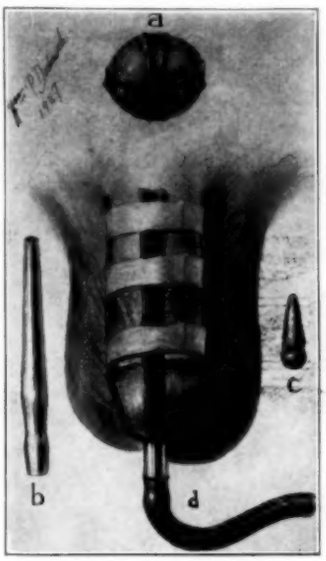


Fig. 2.—Method of retaining catheter: *a*, end of glans penis with flaps turned back; *b*, cannula; *c*, cannula inserted into catheter with rubber tube for drainage.

RESULTS

I have used the instrument in all types of obstruction save for stricture, and have found not only that the catheter is easily and safely inserted but that by the flap method retention is certain and inconvenience to the patient is greatly reduced.

Fig. 3.—Sagittal section showing how filiform guides catheter over large prostatic obstruction.

9 East Mount Royal Avenue.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - - Five dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, MARCH 3, 1928

THE SCIENCE OF MEDICINE AND THE MEDICAL SCIENCES

The striking feature of modern medicine that characterizes its great change from the medicine of the past is its genuinely scientific character.[1] This implies that there exists today a real science of medicine. If this is true, what is its relation to the so-called medical sciences? Or are the terms interchangeable? To these inquiries Dr. Rufus Cole[2] of the Rockefeller Institute for Medical Research directed his vice presidential address as chairman of the Section on Medical Sciences at the Nashville meeting of the American Association for Advancement of Science. He pointed out that, so long as medicine was identified strictly with healing and considered specifically equivalent to the branch of knowledge which has to do with the prevention, cure or alleviation of human disease, the development of its scientific aspects was inevitably greatly inhibited; for the dogma of science is "unrestricted investigation"—the pursuit of knowledge quite independently of any immediate results. As man's early and perhaps primary interest in disease arose from the desire for relief, the latter became the foremost object of medicine. As Cole explains, physicians have been employed by the sick to heal them, and the physicians therefore could not be entirely disinterested seekers after truth. Under these circumstances, it would not have been remarkable if any seeking for knowledge which physicians undertook should always have been directed to a search for cure. Cole also reminds us that whereas the Hippocratic Oath expresses lofty moral principles and registers a vow to transmit the knowledge of the art to certain disciples, it contains not a word about attempting to learn more about disease.

Incident to the pursuit of medicine, certain types of scientific inquiry gradually arose. Eventually they became better organized as human anatomy and physiology. What was more natural than that the physician daily engaged with abnormalities of the most varied sort should become curious about the normal character of the structure and the functions of the body. Physics and chemistry likewise were pursued by physicians, the "searchers" of the earlier centuries; but these disciplines early were divorced from the medical school and acquired a real independence. Cole aptly stresses the significant circumstance that human anatomy and human physiology retained their incorporation in the medical school, and to this day they have never gained their independence. They are still called medical sciences and have had to bear the burden imposed on them, by implication at least, of pursuing knowledge for a definite utilitarian purpose. Whatever the situation may be today, in the past this burden has too often been more than merely that imposed by implication; it has been a real impediment, sufficient actually to hamper the growth of these sciences. Today anatomy and physiology are thriving best where they are most free from the restrictions enforced on them through their inclusion in the medical school. These restrictions are not all associated with the relation of medicine to cure, however. Certain restrictions in the medical school, Cole concludes, have arisen from the attempt to provide a too rigid and all inclusive curriculum which expresses the antithesis of the university spirit.

The fundamental sciences, whether pursued in the halls of a medical school or in some other scholastic environment, should no longer be designated and developed as "medical sciences." They do not serve medicine alone. As Cole says, the only medical science is the science of medicine itself; that is, the science whose field is the study of disease. Even pathology, he avers, is not one of the medical sciences or a contributory science to medicine. It is a part of medicine itself, unless medicine is to be restricted to the cure of disease. The science of medicine is no more applied pathology than pathologic anatomy itself is applied anatomy and histology. The study of pathologic anatomy is, or should be, only one of the methods for investigating disease, and the closer it can be interwoven with the other methods, the more likely are its results to be of value. The field of pathologic anatomy is the study of the effects of disease. To learn about disease actually, that is, to understand the alterations in function and structure which are exhibited by the abnormal individual, the individual himself must be studied, during life as well as after death, and this study must be combined with an attempt to explain the abnormal phenomena in the light of present knowledge and by the aid of all suitable methods. This, Cole concludes, is the science of medicine, if such there is, and if there is not such a science there ought to be.

The scientific method is not the only mode of approach to the problems of medicine. Empiricism,

1. Lee, F. S.: Scientific Features of Modern Medicine, New York, Columbia University Press, 1911.
2. Cole, Rufus: The Interrelation of the Medical Sciences, Science **67**: 47 (Jan. 20) 1928.

the accumulated experience of the past, also has made its helpful contributions. The modern physician as a rule prefers to put past experience to the test of modern experiment. He has little patience with a new idea that has no experimental evidence in its favor. Hence the dictum that the best approach to knowledge is through the gateway of science.

GLYCOGEN IN MUSCLE

Only a few years ago the glycogen distributed in various parts of the body, but conspicuously in the liver and the skeletal muscles, was assumed to play the same part. Bayliss [1] has stated that, by storage in tissues, glycogen, an insoluble substance, is kept out of the risk of undesirable participation in chemical reactions. The glycogen of animal tissues is usually represented as a reserve substance analogous to the reserve carbohydrates stored as starch in different parts of plants. It is further assumed that when the blood is loaded with carbohydrates a considerable proportion is laid down as the inert polysaccharide glycogen. As soon as the supply of sugar to the blood is withdrawn, the tissues continue to use the sugar of the blood, which is made up at the expense of the glycogen in the liver and elsewhere. Thus the food plays the conspicuous part in determining the quantity of glycogen in reserve. In starvation it is known to disappear rapidly from the liver, and has been supposed to vanish from the muscles likewise, though at a later period.

Recent investigations have begun to modify these views as to the behavior of glycogen in the body. In particular they have given the glycogen of the muscle an entirely different significance from that of the liver. According to the new interpretations the glycogen of the liver is to be considered partly as an intermediary substance in the new formation of dextrose out of protein and fat, and partly as a storage form of excess carbohydrate, whereas the glycogen of the muscles has but one function: to serve as the mother substance of lactic acid formation. This implies that in conditions of muscular inactivity no quantitative change should occur in the glycogen of the muscles.

Cogent evidence for the peculiar function of muscle glycogen has been furnished by Choi [2] from the department of physiology at the University of Toronto. He has demonstrated also that glycogen cannot readily be built up in the muscles in the absence of insulin, either derived from the pancreas or injected from without. Thus the quantity of glycogen present in skeletal muscles is not affected by injection of dextrose in eviscerated animals unless insulin is introduced along with the sugar. Epinephrine, which mobilizes sugar in the body, does not stimulate the disintegration of muscle glycogen or give rise to hyperglycemia in the absence of insulin. Choi has shown that glycogen formation does not occur in the muscles after pancreatectomy, and also that the presence of the liver does not in itself determine whether or not glycogen formation in the muscles will occur; in his depancreatized animals the circulation through this organ was undisturbed. Choi concluded, therefore, that in the breakdown process within the intact muscle glycogen is not converted into dextrose but into lactic acid, and that the only condition under which it can indirectly contribute sugar to the blood is when this lactic acid is carried to the liver and there synthesized into glycogen, from which dextrose is readily derived. The glycogen of muscle apparently has an entirely different physiologic significance from that of the liver.

1. Bayliss, W. M.: Principles of General Physiology, London, Longmans, Green & Co., 1915.
2. Choi, Y. O.: The Relationship of Glycogen Formation in the Muscles to the Pancreas and to Epinephrine, Am. J. Physiol. **83**: 406 (Jan.) 1928.

THE GENERAL PRACTITIONER AND MENTAL EXAMINATIONS

This is the age of specialization with skilled diagnosis and treatment of localized disease. In the human animal many special departments are correlated and coordinated into one whole mechanism. The bedside physician of an earlier day was an able observer of the signs and symptoms of disease and of the causes of death as they affected the entire human being. A special department may become disturbed and out of perfect running order because of some disturbance affecting the whole body or from an infection in some other special department. An organ or specialized system in trouble may be of minor importance compared with a more general disturbance, which may be the basis not only of this but of other local abnormalities. Skilled treatment of an abnormality in one department may cause that organ or system to run more smoothly, but not relieve the more important and primary basic disease. There is therefore continuous need for skilled practitioners of general medicine who will know the human being as a whole. Even the skilled diagnostician who has never practiced at private bedsides may fail to grasp the *tout ensemble* of the patient's symptoms, work, home and surroundings, which is apparent to the physician who has had a general bedside practice. If the general practitioner does his full duty he requests a report from the specialist concerning his patient; if the patient is wise he will return to the family physician from time to time to ascertain whether his condition has become normal.

Prominent among specialties in this age of standardization is the rating of mental capacity. The general practitioner should be familiar with the technic of these examinations. He should discover early a child's mental caliber and begin to treat or advise according to his observations. "An intelligence test," as has been pointed out by Wile, "is only a single factor in personality." . . . "The intelligence test does not measure emotions, courage, leadership, artistry or com-

panionability. It is simply a measure of intelligence. Further, it is not an absolute measure like a yardstick or a pound weight. It is a relative measure, depending to no small extent upon where one lives and during what age." This definition by Wile emphasizes the important fact that the mere determining of a child's mental age does not determine his future success or ability to "carry on" later in life. A child with high intelligence may have such a disagreeable personality as to cause his life to be a failure, while a so-called moron may succeed in life and even hold positions of public trust. The intelligence tests must be correlated with the personality, the surroundings and the social condition of each person.

Psychoanalysis, it should be recognized, when applied to mental disease, is only a branch of general medicine. The psychoanalyst who has not studied general medicine before he takes up his specialty is likely to overlook physical, physiologic, nutritional or pathologic causes for the mental abnormalities in his patient. The physical body has long since been partitioned into many specialties. Now the aspects of mental and psychologic diagnosis and treatment are assigned to particular groups. The general practitioner must not lose sight of the value that lies in any of these fields. More than ever there devolves upon him the necessity of keeping abreast of progress in every phase of scientific medicine.

Current Comment

GRAPEFRUIT AS A "PATENT MEDICINE"

In October, 1927, the *Journal of the Michigan State Medical Society* printed an utterly preposterous article entitled "The Therapeutic Value of Hill Grown Grapefruit." In the routine of his duties, an abstracter on THE JOURNAL made a brief summary of it for Current Medical Literature, and by two or three oversights the abstract was published. The editor will never cease to regret it. In the first place there is not the slightest scientific evidence that any kind of grapefruit has any curative virtues in diabetes. The article mentioned vaunts the alleged potency of a special brand of grapefruit; it refers to the case of a Dr. Roy who details his alleged cure of a serious case of diabetes, and now, apparently, it has led to a real-estate promotion and to the foundation of a sanatorium company from a small district in Florida. They, it seems, are going to sell this "medicinal fruit," limiting it to patients of the institution or to physicians' prescriptions. They are going to examine and certify this fruit, and they are going to have it in cans when the fresh fruit is out of season. The scheme ought to sell a lot of grapefruit. The Michigan physicians assert that their particular "Howey-in-the-Hills grapefruit" is good for arteriosclerosis also. We are sorry that the Michigan journal printed such an unscientific article. We are even more sorry that our abstracter made his little abstract; we are absolutely overcome with chagrin at the oversight that let the little abstract into the pages of THE JOURNAL. We hope that everybody who buys the grapefruit will enjoy it—as grapefruit, not as "patent medicine." Florida papers please copy!

THE HEALTH DEMONSTRATION

In the annual report of the general director of the Commonwealth Fund for 1927 appears a paragraph concerning the relationships of demonstrations made under this fund to the practitioners of the communities served. This paragraph is an indication of the importance of conducting such demonstrations in full accord with the local medical profession. In a recent issue of THE JOURNAL the views of the physicians in Fargo, N. D., relative to the demonstration held in that city were set forth. Fargo was one of the cities in which the Commonwealth Fund did its work. The important paragraph reads:

> Closely allied to this popular demand for health services is the attitude of the local practitioner toward health supervision. The medical societies in the four communities have officially endorsed the demonstration program as a whole. Individual practitioners have gone further in indicating that they recognize and welcome the aid of the demonstration in promoting preventive medical service. In a group of doctors who were recently asked to state their impression of the results of the community health program as reflected in their own practice one called attention to "better response in supervision of well infants," another to "more attention to nose and throat and eyes of apparently healthy children." Another reported, "Am seeing more children in my practice than formerly," still another, "Women report well for prenatal and postnatal observation." Another physician in the same community has called attention to the fact that the sound medical and nursing procedures of the demonstration tend to strengthen the position of the well trained practitioner in competition with the cultist and faddist. As a corollary to an increasing desire for health supervision, the physicians in the demonstration communities have responded cordially to special opportunities for improving their own preventive practice—attending institutes on preventive pediatrics, calling the demonstration pediatricians into consultation, and in one case at least voluntarily suggesting special clinics to prepare themselves for increasing participation in the community health program. Such attitudes on the part of both patient and physician should result in definite betterment of the health of the growing generation.

Obviously the attempt in any demonstration should be to give to the community confidence in its medical profession, and to show to the medical profession the technic and the importance of the practice of preventive medicine by the general practitioner.

In no field of medicine is such far-reaching imposition practiced as in the giving of mixed gland preparations; in the case of some physicians it has assumed the proportions of a medical cult.

Electricity, like every other potent force used in medicine, is a two-edged sword; in the hands of the ignorant it may work disaster.

Medical economics—the science of making a living while satisfying the notions of socialists and social workers.

Nothing costs so much to build as good will—but it is the tenderest of plants and easily destroyed.

Association News

ABSTRACT OF MINUTES OF ANNUAL MEETING OF BOARD OF TRUSTEES, HELD IN CHICAGO, FEB. 17, 1928

An informal meeting of the Board of Trustees of the American Medical Association was held in Chicago, Thursday, February 16, and the regular meeting convened on Friday, February 17.

EMPLOYMENT OF AN ECONOMIST

Further consideration was given to the advisability of the employment of an economist who might undertake studies of economic questions under the auspices of the American Medical Association. This matter was first considered by the Board at its November meeting.

INCREASE IN PRICE OF QUARTERLY CUMULATIVE INDEX MEDICUS

Because of the large expense incident to the publication of the *Quarterly Cumulative Index Medicus*, it was decided to increase the subscription price of this publication to $12 a year, to take effect, Jan. 1, 1929.

TREATMENT OF EX-SERVICE MEN AT PUBLIC EXPENSE

A special committee of the Board of Trustees was instructed to prepare a report to be submitted as a part of the report of the Board to the House of Delegates, relative to the treatment at public expense of ex-service men for diseases and injuries incurred in civil life.

ELECTIONS

Nominations to fill vacancies on the Council on Pharmacy and Chemistry, on the editorial boards of the special journals, and on various committees were considered, with the result that the following men were elected to positions on these bodies:

Drs. R. A. Hatcher, E. E. Irons and W. T. Longcope to succeed themselves on the Council on Pharmacy and Chemistry.

Drs. Robert Lynch, S. B. Wolbach, E. A. Graham, W. T. Longcope, Stanley Cobb and W. McKim Marriott to succeed themselves on the editorial boards of the *Archives of Otolaryngology, Archives of Pathology and Laboratory Medicine, Archives of Surgery, Archives of Internal Medicine, Archives of Neurology and Psychiatry* and the *American Journal of Diseases of Children*, respectively.

Dr. John C. Gittings of Philadelphia also was elected to the editorial board of the *American Journal of Diseases of Children*, to succeed Dr. John Howland (deceased).

Dr. J. J. Morton, Rochester, N. Y., was elected to succeed Dr. Charles H. Frazier on the Committee on Scientific Research.

Dr. Elliott C. Cutler of Cleveland was elected to succeed Dr. Montrose Burrows as chairman of the Committee on the Protection of Medical Research, and Dr. William Pepper was elected to succeed himself on that committee.

SCIENTIFIC QUESTIONS

A communication from the Conference of Section Secretaries with the Council on Scientific Assembly was presented. This expressed the opinion of the members of that conference that questions of purely scientific bearing coming before the House of Delegates should be referred to the Council on Scientific Assembly or, when necessary, to that council and the Council on Pharmacy and Chemistry. It was the sense of the Conference of Section Secretaries with the Council on Scientific Assembly that little good could be accomplished by referring such questions to the sections.

SECTION TRANSACTIONS

The Secretary and General Manager was instructed by the Board of Trustees to communicate with the officers of the various sections of the Scientific Assembly and to request them to inform their members that, if the transactions of any section are not ordered in sufficient number to justify their publication, the printing of the transactions of that section will be discontinued.

SECOND PUBLIC HEALTH CONFERENCE

The program for the Second Conference on Public Health, to be held March 30-31, was approved by the Board of Trustees. This program is to be as follows:

1. Free and Part Pay Clinics. The lay point of view is to be presented by Dr. E. H. Lewinski-Corwin of New York, and the point of view of the profession by Dr. L. L. Bigelow, Columbus, Ohio.

2. Health Demonstrations. Courtenay A. Dinwiddie, of the Commonwealth Fund, who has had charge of the demonstrations conducted by that fund, will present the point of view of the Commonwealth Fund. Dr. C. G. Brown of Mansfield, Ohio, will present the facts concerning the health demonstration held in that city and the point of view of the profession based on their actual experience with that demonstration.

3. Public Health Surveys. This subject will be presented by Dr. Rosco Leland of the headquarters office, and will be thrown open for general discussion.

WOMAN'S AUXILIARY

The Board of Trustees approved the requests of the president of the Woman's Auxiliary, Mrs. John O. McReynolds, relative to changing the name of the Liaison Committee of the Woman's Auxiliary to Advisory Committee of the Woman's Auxiliary, and to having the names of the committee printed on the stationery of the Woman's Auxiliary.

REPRESENTATION IN AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE AND ASSOCIATED SOCIETIES

The Board appointed Drs. George M. Kober and George M. Piersol to represent the Association in the American Association for the Advancement of Science and Associated Societies. Drs. Kober and Piersol have represented the Association in this capacity for several years.

The rest of the meeting was devoted to the consideration, seriatim, of the report of the Board of Trustees to the House of Delegates, reports of standing and special committees, budgets and other routine matters.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CONNECTICUT

Yale Becomes Practically an Honor School.—A new curriculum has been adopted at Yale University School of Medicine, New Haven, which gives the student liberty in accordance with his ability and makes the institution practically an honor school. The dean, Dr. Milton C. Winternitz, says that for years an objective of the faculty has been to discriminate less between the prospective student candidates for the degree of doctor of medicine and that of doctor of philosophy in various biologic sciences. Without reducing the number, he believes, this procedure will produce better trained physicians and contribute to the movement in preventive medicine. There are several hundred students in the Graduate School of Yale University devoting themselves to one or another branch of biology with the idea of becoming teachers and investigators. As time has gone on they not infrequently have concluded, after one or more years of training in some field of biology, to prepare themselves for the practice of medicine and, to allow this interchange, a greater elasticity between the graduate school and the school of medicine has developed. The Yale school of medicine occupies a unique position in this regard, as no line of cleavage for the university departments occurs, irrespective of the schools they serve. Candidates for a doctor of philosophy and those for a doctor of medicine find themselves in the same building and taught by the same instructors. Experience, the dean continues, has indicated the inadvisability of inelastic stratification of the curriculum for men of this type, so the medical school has introduced the same liberal educational policies for candidates for a doctor of medicine as were introduced years ago in the graduate school for candidates for a doctor of philosophy. The school of medicine now prefers to admit students primarily on account of their interest in the biologic sciences rather than on a preconceived idea of becoming doctors of medicine. The stu-

dent selects the courses in biology which he desires to pursue and for which the instructor considers he is prepared. Later he concludes whether he will make a more successful doctor of philosophy or a doctor of medicine, and then presents himself for qualification. This is the first examination required of him, and it may be in less than a year and a half after admission to the school or twice as long. Students are not grouped by classes. The student, during the preliminary period, regards his instructor as a co-worker. After the completion of the first test and having determined on his career, he proceeds further with his education according to the same liberal principle and appears again for examination before graduation, after having completed the fundamental courses and having had his thesis accepted. The fundamental courses at Yale have been reduced to a minimum. The student has practically half his time for elective study; he is not taught, but assisted in acquiring knowledge. The class rooms are in many instances designed so that the student is considered practically a member of the staff. A fundamental point of this system is the complete liberty of the student to acquire the knowledge he requires for the completion of his qualification examination or graduation. If he feels a subject may be pursued more efficiently at another institution, at home or abroad, it is his privilege to take advantage of his conclusion, for all that is required of him is the demonstration of knowledge in the subject; grades and hours of work are not even recorded in the administrative office.

ILLINOIS

Society News.—Dr. Howard B. Goodrich, Hannibal, Mo., addressed the Adams County Medical Society, Quincy, February 13, on "The Prevention of Puerperal Infection," and Dr. Francis E. Sultzman, Hannibal, on "Throat and Upper Respiratory Infections."——The twenty-first annual meeting of the Illinois State Academy of Science will be held at the Illinois State Normal University, Normal, May 4-5.——Dr. Gerald M. Cline, Bloomington, addressed the Ford County Medical Society, Paxton, January 17, on "Infant Feeding."

The Lawyers Want the Banks to Stop Practicing Law.—The Illinois and the Chicago Bar associations have brought disbarment proceedings in the Illinois Supreme Court, challenging the right of banks and trust companies to engage in the practice of law and asking that a certain bank in Chicago be forbidden to collect fees for legal service performed by its attorneys and that all other banks and trust companies be similarly enjoined. The object is to break up a practice which has grown in financial institutions of having their lawyers perform services in connection with the transactions of customers.

Chicago

Lucy Hagenow's License Revoked.—The license of Lucy Hagenow, a midwife who was recently sentenced to fourteen years in the penitentiary for murder by abortion, has been revoked by the Illinois Department of Registration and Education.

Foreign Health Posters.—For several years the Chicago Tuberculosis Institute has been collecting posters on public health from various countries. The foreign health posters are now on exhibition at the University of Illinois School of Medicine, Harrison and Wood streets, and later will be exhibited at Northwestern University Medical School, Chicago Avenue near the lake.

Personal.—Edwin R. Embree, who has been with the Rockefeller Foundation, New York, since 1917, and was vice president for the last year, became president of the Julius Rosenwald Fund with headquarters in Chicago, January 1.——Dr. Louis Leiter has been appointed secretary of the department of medicine of the University of Chicago; Dr. Roy Grinker, clinical instructor in neurology; Dr. Marie Ortmayer, part-time clinical instructor in the department of medicine; Dr. Ralston Paterson, instructor in roentgenology, and Dr. José Santos, instructor in the department of surgery.

Beds for Indigent Pernicious Anemia Patients.—The University of Chicago Medical Clinics and the Otho S. A. Sprague Memorial Institute have organized a cooperative program to continue the treatment and study of pernicious anemia inaugurated by the late Dr. Karl K. Koessler. Beds have been set aside in the Billings Hospital for the care of patients, and the laboratories of the institute will conduct their part of the program. A limited number of patients who cannot finance their own hospital care will be supported during the course of their treatment by the institutions engaged in the work. Dr. H. Gideon Wells is director of the institute.

Hospital News.—Max Epstein has given $100,000 to the building fund of the new lying-in hospital on the campus of the University of Chicago; Mr. Epstein previously endowed a clinic at the university which bears his name.——Ground has been broken for the new $1,500,000 Passavant Hospital on McKinlock Campus of Northwestern University Medical School at Superior Street and Fairbanks Court. The old Passavant Hospital was abandoned two years ago.——The Chicago Tuberculosis Institute has affiliated with the medical center at the University of Chicago, it is reported. The work of the institute's sanatorium at Naperville under this arrangement will be controlled by the university, and admission to the sanatorium will be through the university's outpatient department. Mrs. Theodore B. Sachs will continue as administrative head of the sanatorium.——The Lutheran Memorial Hospital, 1116 North Kedzie Avenue, is conducting a campaign to raise $750,000 to provide a nurses' home, a children's department and to enlarge the maternity section.——The Chicago Municipal Tuberculosis Sanitarium has opened a 225 bed addition costing $1,000,000. The first two floors consist of all single rooms to be used for patients suffering from complications; the third floor is entirely for the care of children.

Society News.—Dr. Frank C. Mann, Mayo Clinic, Rochester, Minn., delivered the fourth L. L. McArthur lecture of the Billings Foundation before the Chicago Institute of Medicine, City Club, February 24, on "Experimental Peptic Ulcer."——Dr. Isaac A. Abt, president of the Chicago Medical Society, gave a "Review of the Treatment of the Pneumonias of Young Childhood" at a joint meeting of the society and the southside branch, February 29; Drs. Harry M. Richter spoke on "The Basis of the Surgical Treatment of Thyrotoxicosis," and Charles J. Drueck on "Management of Inoperable Carcinoma of the Rectum."——Dr. Austin A. Hayden will address the Chicago Laryngological and Otological Society, March 5, at the Stevens Restaurant at 6 North Wabash Avenue on "Fifth Year Otolaryngology in the Average General Hospital." The discussants will be Drs. Nathan P. Colwell, secretary, Council on Medical Education and Hospitals of the American Medical Association, and Malcolm T. MacEachern, director, hospital activities, American College of Surgeons. The deans of the medical schools of Chicago and members of their intern committees have been invited to this meeting. Dr. Jacques Holinger will speak on "Total Paralysis of the Vocal Cord."——Drs. Preston M. Hickey, Ann Arbor, Mich., and Lawrence Reynolds, Detroit, will address the Chicago Roentgen Society, March 8, Virginia Hotel, on "Roentgen Examination of the Normal Larynx" and "Roentgen Examination of the Pathologic Larynx," respectively, and Dr. Samuel J. Fogelson on "Function of the Gallbladder in Pregnancy."——Members of the Chicago Medical Society are invited to be guests of the board of directors of the Valmora Sanatorium, Valmora, N. M., at the grill room, Marshall Field Annex, March 15, 6:30 p. m., for which tickets may be obtained from the presidents of the branch societies. This institution is incorporated, not for profit, for the treatment of tuberculosis.——Dr. Aleš Hrdlička, Washington, D. C., lectured at the University of Chicago, January 25 and 26, on "Origin and Evolution of Man in the Light of the Latest Knowledge" and "The Lessons of Human Evolution."——The class of '89 of Rush Medical College held its thirty-ninth annual reunion at the Bismarck Hotel, February 20; ten of the seventy living members were present.

KENTUCKY

Society News.—Because of the condition of the roads no joint meetings of the Adair, Green and Taylor Medical Society will be held the first three months of the year; an all-day meeting is planned for June in which noted speakers will be invited to take part. At the annual meeting in December at Campbellsville College, Drs. Ellis S. Allen and Albert L. Bass, Louisville, gave addresses on "Value of the Ophthalmoscope" and "Malignancy," respectively.

Personal.—Dr. James M. Salmon, Ashland, has been elected president of the Central Tri-State Medical Society for the ensuing year.——Dr. Samuel B. Marks has succeeded Dr. Waller O. Bullock as president of the board of health of Lexington; Dr. Bullock served on the board for about fifteen years.——The health officer of Louisville, Dr. Clarence H. Harris, has been appointed collaborating epidemiologist for Kentucky in the U. S. Public Health Service at a salary of $1 a year.——Dr. Luther Bach has resigned as director of the Breathitt County Health Unit and will go to Bellevue.

MASSACHUSETTS

Personal.—Prof. James O. Jordan, for twenty-one years a chemist in the Boston City Health Department and later a milk inspector, died, January 6. He was for more than ten years an assistant in materia medica at Harvard University Medical School.——An oil portrait of Dr. John W. Farlow, for nearly twenty-five years librarian of the Boston Medical Library, has been hung in Holmes Hall.

Licenses Revoked.—The state board of registration in medicine revoked the licenses, Dec. 29, 1927, of Dr. Wallace P. MacCallum, Boston, on evidence which is said to have shown gross misconduct in the practice of his profession, and of Dr. Andreas F. Christian, Boston, on evidence which showed he had been guilty of deceit, malpractice and misconduct in the professional care of a patient and for violation of the prohibition act. The license of Dr. Hormidas Choquette, New Bedford, was revoked, Sept. 8, 1927, for gross misconduct in the practice of his profession as shown by evidence that he had performed an illegal operation.

Dr. Otis Honored.—About 150 persons attended a dinner at the University Club, Boston, January 31, to honor Dr. Edward O. Otis and to mark the completion of his forty-two years' service on the staff of the Boston Dispensary. A handsome humidor with an engraved silver plate was presented to him. Dr. Otis, who is nearly 80 years of age, was appointed surgeon to the Boston Dispensary in 1886. He was formerly president of the National Tuberculosis Association, of the American Public Health Association and of the American Climatological Association; he was a delegate in 1901 to the Congress on Tuberculosis in London, and in 1912 to the International Convention on Tuberculosis in Rome. He is the author of a book for laymen on tuberculosis; for many years he has been a member of the Massachusetts Medical Society and he was president of the Massachusetts Tuberculosis League from 1919 to 1925. Dr. Maynard Ladd, president of the dispensary, who presided at the dinner, referred to the guest of honor as "the grand old man of medicine," internationally known in the field of tuberculosis.

Boston Claims Typhoid and Tuberculosis Records.—Mortality statistics indicate that the death rate in Boston in 1927 was 14 per thousand population, a rate which has been excelled only in 1921, when it was 13.49. The birth rate for 1927 was 23.9 per thousand population, a slight rise over the two previous years. The infant mortality rate was 76.78, a considerable decline over the last two years and a slight increase over the infant mortality rate of 1924. Only nine deaths were due to typhoid, a rate of 1.13 per hundred thousand population, and a record, the health department states, which is probably excelled by no other large city in the world. It is considered remarkable because two local typhoid outbreaks brought the reported number of cases up to 121, of which twenty-two were in nonresidents. There was a slight increase in deaths from diphtheria, the total being sixty, six more than in 1926. The death rate from all forms of tuberculosis was the lowest ever recorded in Boston, 86.1 per hundred thousand population. The death rate (75.8) from pulmonary tuberculosis was also the lowest ever attained in this city. Rabies among animals increased; sixty-three persons who were unable to pay were given antirabic treatment at the expense of the city. Although Massachusetts experienced the worst epidemic of infantile paralysis in its history, Boston suffered little compared with other cities.

MINNESOTA

Personal.—Dr. Charles E. Proshek, Minneapolis, has been decorated by the king of Serbia for medical service in the World War.——Dr. Charles H. Mayo, Rochester, has been elected a vice president of the American Stomatological Association.

Society News.—Dr. Daniel N. Eisendrath, Chicago, addressed the Hennepin County Medical Society, Minneapolis, February 29, on "Diagnosis and Treatment of Secretory and Obstructive Anuria."——Dr. Steven H. Baxter has been elected president of the Surgical Society of Minneapolis for 1928.

MISSISSIPPI

Society News.—At a meeting of the South Mississippi Medical Society, March 8, South Mississippi Charity Hospital, the speakers will be Drs. Urban Maes, New Orleans, Walter W. Crawford, Hattiesburg, and Harold J. Mixson, Laurel.——At the January 27 meeting of the North Mississippi Six Counties Medical Society, New Albany, the following speakers from Memphis read papers: Drs. James B. Stanford, William T. Black, Charles H. Heacock and John C. Ayres. Dr. Billy S. Guyton, Oxford, spoke on "Asthma"; Dr. Guyton was elected president of the society for the ensuing year.——Drs. John A. K. Birchett, Jr., addressed the Issaquena-Sharkey-Warren Counties Medical Society, Vicksburg, February 14, on "Observations on the Thymus"; Albert K. Barrier, Rolling Fork, on "Syphilis," and Hugh H. Haralson, Vicksburg, on "Diagnosis of Varicella."

MISSOURI

Another Effort to Aid Crippled Children.—A group of citizens met in St. Louis last month to organize the Eugene Field Foundation for the Relief of Crippled Children. The immediate object is to raise $100,000 by April 1 to meet the emergency caused by the exhaustion of the state appropriation of $35,000 for the care of crippled children. The foundation, which will include representative persons from all parts of the state, will aim to provide hospital care and education for indigent crippled children, provide appliances and maintain hospital wards. Ninety days after this work was begun at the University of Missouri last July, thirty-six children had been admitted from eighteen counties and the hospital space exhausted, with four fifths of the counties still to be heard from.

Hospital News.—The Southeast Missouri Hospital, Cape Girardeau, was dedicated, January 8. This four story structure, costing $150,000, has sun parlors, recreation rooms, laboratories, nurses' home and other conveniences. The principal speaker at the dedication was Dr. Benjamin A. Wilkes, superintendent, Missouri Baptist Sanatorium, St. Louis. The chief of the medical staff is Dr. Daniel H. Hope.——The sons of Mr. Seeley Mudd of California have given $25,000 in memory of their father, which will be used to establish a department for the treatment of cancer by deep roentgen-ray therapy at St. Luke's Hospital, St. Louis.——The forty bed Brandon Hospital, costing about $100,000, was dedicated and opened, January 22, at Poplar Bluff. Dr. Walter L. Brandon is surgeon in charge.

Mr. Mallinckrodt's Will.—Edward Mallinckrodt, St. Louis, chemical manufacturer, who died, February 1, aged 83, left an estate, estimated at about $2,000,000, to be used for science, religion, charity and education. Having long since adequately provided for his family, he mentions Washington University and St. Luke's Hospital in his will, stipulating that at the discretion of his son the estate might be divided equally or unequally between these institutions, or that any or all of it might be diverted to other philanthropies, as the son elects. The remainder of the total, provided the estate remains untouched during his son's life, is to be divided equally between the university and the hospital. Mr. Mallinckrodt was a member of the board of trustees of Washington University, to which position now his son has been elected. The father, during his life, gave about $1,000,000 to the medical school of the university, about $500,000 to Harvard University, and many thousands to St. Luke's Hospital, St. Louis.

Society News—Program on Ethics.—The Jackson County Medical Society gave a program, February 14, under the auspices of the Phi Beta Pi Medical Fraternity; Dr. Frank G. Nifong, Columbia, read a paper on the "Moral Aspect of Division of Fees," Dr. Dudley A. Robnett, Columbia, on "Moral Aspect of Physicians Relative to Prescribing Liquor or Its Use as a Beverage," and Dr. Fred W. Bailey, St. Louis, "Relation That the Physician Should Maintain Toward Other Physicians."——The St. Louis Medical Society would be pleased if one of its members would donate a piano.——Drs. Leland B. Alford and Raymond C. Fagley addressed the St. Louis Medical Society, February 28, on dextrose in the treatment of acute and chronic encephalitis; Dr. French K. Hansel spoke on malignant tumors of the nasopharynx.——The St. Louis Heart Association provided the program, February 21, for the St. Louis Medical Society. Moving pictures of the heart's action were exhibited; Dr. Arthur E. Strauss read a paper on "Clinical Myocarditis," and Drs. Eugene Lee Shrader and Eugene F. Moore on "Clinical Studies of Bundle Branch Block."

Survey of Health Activities in St. Louis.—A comprehensive survey of the health activities of St. Louis was recently made by official and volunteer agencies. A report was made to the St. Louis Medical Society, January 10, by Dr. Haven Emerson, New York, consultant in the survey, and W. F. Walker, D.P.H., field director, committee on administrative practice, American Public Health Association. The survey was made at the invitation of the city commissioner of health and a citizens' committee for the promotion of St. Louis

health activities financed by the Community Fund. It was undertaken to determine what the situation is as to hospital facilities, dispensary work, social service and visiting nurses. The general impression derived from the report, the bulletin of the St. Louis Medical Society says, is that St. Louis is active and interested in public health activities of the community, yet there are faults in the method of conducting affairs which warrant closer study and vigorous effort at correction. The survey showed that of the $34.26 expended per capita for general government, the expenditure for health purposes through official channels is $0.91, or 2.06 per cent of the total. Among the cities of the country of more than 500,000 people, of which there are fourteen, St. Louis is tenth on the list as to the per capita expenditure for health. They are in order: Buffalo ($1.56); Boston; Detroit; Milwaukee; Cleveland; Los Angeles; San Francisco; Chicago; Pittsburgh; St. Louis; New York; Baltimore; Washington, D. C.; Philadelphia ($0.62). Mortality in St. Louis has gradually declined, yet not so much as it has for the entire registration area. On the basis of a perfect rate of 1,000 for the total public health activities, St. Louis was given an appraisal in the survey of 783 points, or 78 per cent. The report recommends that the community council establish a hospital and health division to plan, promote and coordinate those community functions which are necessary for health protection and for the care of the sick, on which all allied professional groups and all operating agencies should be represented. The service of a full-time secretary would be required to direct the work of the division.

NEW YORK

Erie County Medical Society and the Buffalo Clinics.—At a meeting of the Medical Society of the County of Erie, Buffalo, February 15, resolutions were unanimously adopted to support the Cattaraugus County Medical Society in its stand against the continuance of the Milbank Fund's public health demonstration in Cattaraugus County. The resolutions also called attention to the retrenchment policy of the Buffalo city administration and declared that the health centers and well baby clinics operated by the city of Buffalo and Erie County should be abolished in the interest of economy and to prevent further pauperization of the public. The society declared that it is not necessary for the good of either to interpose any agency between the physician and the patient. Buffalo operates six health centers and seventeen well baby clinics through its health department. The discussion which preceded the adoption of this resolution followed addresses by Drs. Joseph P. Garen and Raymond B. Morris of Olean, president and secretary of the Cattaraugus County Medical Society, and was participated in by Dr. Harry R. Trick, Buffalo, president-elect of the Medical Society of the State of New York; Dr. Edward E. Haley, Buffalo, and many others. It continued until 1 o'clock in the morning.

Milbank Fund Report on Cattaraugus Demonstration.—The president of the Milbank Memorial Fund, Edward W. Sheldon, notes in the *Quarterly Bulletin* that the Cattaraugus County Health Demonstration completed its fifth year, Dec. 31, 1927, and that the board of supervisors unanimously voted funds to finance, without modification, the activities which the county board of health included in its program for 1928. Cattaraugus County witnessed during the five-year demonstration, he said, a reduction of about one third in the tuberculosis death rate and of nearly one fifth in the infant mortality rate. Since the only important factor in the environment in this county which has changed for years is the institution of intensive public health work, it is difficult to escape the conclusion, it is said, that there is a direct relationship between this work and the reduction in sickness and death rates. Practical contributions of the demonstration, Mr. Sheldon continues, have been the establishment of the first county health department and the first county-wide school health unit in the state. He notes that the county medical society made objections to the program and budget of the county health department, apparently because of the concern of some physicians regarding the possible effect on medical practice. He relates that, under the leadership of the county board of health, the physicians gave wholehearted cooperation in the development of the county health department; they helped build up the program for the prevention of tuberculosis; helped to institute a program to protect the health of pregnant women and of babies and younger children; aided in the correction of over half of the physical defects found among rural children, and cooperated in a campaign of immunization against diphtheria.

New York City

First Class Dinner in Twenty Years.—The class of 1908 of University and Bellevue Hospital Medical College will hold its first anniversary dinner, March 10, at Hotel Roosevelt; all members are cordially invited. The speakers will be Drs. George D. Stewart, Harlow Brooks, Robert J. Carlisle and Dean Samuel A. Brown.

Fund to Found Chair in Pathology.—The alumni of the College of Physicians and Surgeons of Columbia University have donated to the university $128,000, to be held in trust until it reaches $200,000, to found a chair in pathology to be called the Francis Delafield Professorship in honor of the founder of the pathologic laboratory at the college.

Dinner to Senator André Honnorat.—The American committee for the American dormitory in University City, Paris, will give a dinner at the Hotel Biltmore, March 9, which will be attended by a distinguished group of educational leaders and will be given in honor of Senator André Honnorat, head of the Cité Universitaire Foundation and former French minister of education and fine arts. George W. Wickersham will preside; among the speakers will be Charles Evan Hughes and probably President Abbott Lawrence Lowell of Harvard University. There will be no money raising at the dinner.

Recreation—Girls Prefer Dancing.—The director of the Welfare Council of New York announces that thirteen organizations concerned with the direction of recreation and character building for the half million girls in Greater New York have organized a section of the council. Prof. Jay B. Nash of New York University, who made an appraisal of public recreational facilities, has pointed out that an inquiry among continuation school students showed that dancing was the favorite recreation of 92 per cent of the girls and only 2 per cent of the boys. He said there are more facilities in New York for noncommercial recreation than in almost any other city in America. The new recreation section of the welfare council will seek a better basis for community planning and better standards of social work. The number of agencies in the Welfare Council of New York now is 639, of which 135 are concerned with family welfare, 160 with child welfare, 297 with health, and forty-seven primarily with recreation, education and neighborhood activities.

Opinions on Private Health Demonstrations.—At a luncheon, February 23, under the auspices of the community health councils of the Bellevue-Yorkville Health Demonstration, the East Harlem Health Center and the East Harlem Nursing and Health Demonstration, Dr. Louis I. Harris, city health commissioner, presided. The luncheon, which was in connection with the third annual New York Health Conference, was attended by more than 400 persons. Among the speakers were Dr. Linsly R. Williams, director, New York Academy of Medicine; Mr. John A. Kingsbury, secretary, Milbank Memorial Fund, and Homer Folks. According to the New York *Times*, Dr. Harris stated that privately conducted health demonstrations were "sapping the strength of the official health body" and that he saw no reason for the existence of private agencies in the public health field in New York except as advisory committees. He said "the city of New York has been a pioneer in public health work since the close of the Civil War. The health department is the logical agency for this work. We can do it just as well as private agencies. If wealthy men would supply the necessary money we could do public health work and cover the entire city as it should be done, instead of just a small section. We have trained workers and the organization. A volunteer health organization ought to be essentially a 'help organization.' The private agencies that have money to spend could best help by appointing an advisory council of public health experts as a board of trustees who will counsel the health commissioner or duly constituted health officers how most wisely to expend such private funds, leaving the health department free to conduct health work on a more intensive and wider scale without competition by private agencies." Mr. Kingsbury is reported to have said, "I quite agree with Dr. Harris that the city should be in charge of health work. That is the purpose of a health demonstration; to show what can be done. But the city has not the money to spend." Dr. Williams, whose subject was, "The Doctor and Health Activities," said that "the county medical society should be the leader in all public health activities and should inaugurate new measures. Human nature exists in physicians as in other classes of society and the doctor naturally reacts in opposition to projects in regard to which he has not been consulted." He urged that social welfare agencies engaged

in any type of health activity keep the county medical societies informed of the work and seek advice and council of them before undertaking new work.

PENNSYLVANIA

Hospital News.—The George F. Geisinger Memorial Hospital, Danville, dedicated a $300,000 addition, January 12.——Mr. Fred M. Kirby will give to the city of Wilkes-Barre a health center, costing $200,000, as a memorial to his mother.

State Health Department Items.—The Pennsylvania State Department of Health has had inspectors in Philadelphia, recently, endeavoring to complete 503 delayed birth certificates which a few physicians neglected to provide. The local office of vital statistics reported a still greater number of unreported births, but birth certificates for nearly 300 of them were completed by follow-up work. Only a few physicians have left themselves open to prosecution for failing to supply a birth certificate within the required period of ten days.——Nearly 8,800 cases of venereal disease were brought into the fifty-seven free clinics operated by the commonwealth during 1927, and 3,157 of these were either cured or made noninfectious through treatment.

Personal.—Dr. James D. Heard, Pittsburgh, was elected president of the Pennsylvania Heart Association for 1928.——Dr. Joseph C. Reifsnyder, Scranton, was elected president, February 13, of the Pennsylvania Public Health Association.——Dr. Robert A. Gaughan has been named superintendent and chief surgeon of the Hazleton State Hospital to succeed the late Dr. Walter A. Lathrop.——Dr. Henry R. M. Landis, Philadelphia, director, clinical and sociologic departments, Henry Phipps Institute, was elected president of the Pennsylvania Tuberculosis Society at the annual meeting in Harrisburg. The board of directors of the society was increased to thirty-seven at this meeting and Dr. Wesley F. Kunkle, Williamsport, was elected director.

Philadelphia

Society News.—Dr. Jean P. Pratt, Henry Ford Hospital, Detroit, addressed the Philadelphia Obstetrical Society, March 1, on "Neuropsychiatric Manifestations Seen in the Practice of Obstetrics and Gynecology"; the discussants were Drs. Charles W. Burr, Edward A. Strecker and Barton Cooke Hirst.——Among others, Dr. Charles Mazer addressed the Northern Medical Association of Philadelphia, February 20, on "The Responsibility of Defective Kidney Drainage for Obscure Abdominal Pain," illustrated with lantern slides.——Dr. Charles K. Mills opened the discussion on brain tumors before the Philadelphia Neurological Society, February 24, and was followed by Dr. James H. Lloyd. This was a continuation of the discussion before the society at its January meeting.

SOUTH DAKOTA

Personal.—Dr. Edson C. Miller has been made a life member of the Brookings Kiwanis Club; Dr. Miller, who has practiced in that community more than twenty-five years, has served as state senator and held other positions of trust. He retired from active practice at 80 years of age.——Dr. Edward R. Lindner has been appointed governor of the Battle Mountain Sanatorium, Hot Springs.——Dr. William A. George, Selby, has been appointed county physician of Walworth and Dr. Andrew V. Rock, Mobridge, assistant.

Another Magazine "Agent."—Physicians of Clark have been visited by a Mr. G. E. Kennedy who represented himself as a bonded representative of the Mid-West Circulation Company, 432 Railway Exchange Building, Chicago, and took orders for well known magazines. The magazines were not delivered, and an inquiry has been made at this office. It was found that there was no Mid-West Circulation Company at the address given, and the agent of the building believed also that there never had been.

Society News.—At the annual banquet of the Aberdeen District Medical Society, January 16, Dr. John E. Dunn, Groton, was elected president, succeeding Dr. Willard A. Bates, Aberdeen; Dr. Robert D. Alway, Aberdeen, gave an address on "Clinics in Vienna"; Dr. Solon Marx White, Minneapolis, on "Etiology, Clinical Recognition and Management of Various Types of Tachycardias," and Dr. Frank J. Tobin, Mitchell, on "Diagnosis of Surgical Lesions of the Kidney and Ureter."——At the annual meeting of the Whetstone Valley District Medical Society (twelfth district), January 16, Drs. Albert L. Severeide, Webster, read a paper on "Undulant Fever in South Dakota"; Dr. Faris F. Pfister, Webster, "Eczema in Infancy and Early Youth," and Dr. Albert E. Brown, Webster, on "Eclampsia." Dr. Andrew P. Hawkins, Waubay, was elected president for 1928.

TEXAS

Chiropractor Convicted.—S. T. McMurrain, Dallas, a chiropractor, was fined $50 and costs and sentenced to one day in the county jail by a jury, January 24, on a charge of practicing medicine without a license. Among those who testified at the trial were Dr. Thomas J. Crowe, secretary, state board of medical examiners. T. E. Sims said he had visited McMurrain three times for treatment and each time paid a $3 fee.

Personal.—Mrs. John O. McReynolds, Dallas, president of the Women's Auxiliary of the American Medical Association, has offered a prize of $50, according to the *Atlantic Medical Journal*, to the state auxiliary which secures the largest number of subscriptions to *Hygeia* and a prize of $50 to the county auxiliary which secures the largest number of subscriptions in proportion to its membership.——Dr. Walter C. Palmer has been elected health officer of the city of Ranger.

Justices to Secure Vital Statistics.—A new vital statistics law provides for a registrar for each justice precinct which will increase the number of registrars to about 1,500 and afford prompt registration of vital statistics in every nook of this great state. The *Texas State Journal of Medicine* notes that the justice of the peace is the logical man for this newly created office of local registrar of vital statistics, and that to date the state health officer has appointed about 500 of them to perform that duty.

Dr. Outlaw Appointed Health Officer.—Dr. Phau R. Outlaw has been appointed health officer of the city of El Paso to succeed the late Dr. Richard A. Wilson. Dr. Outlaw has been the assistant health officer for two years and a resident of El Paso for about fifteen years. He is a graduate of Bellevue Hospital Medical College, New York, was connected with the New Orleans Health Department for two years, spent two years in Central America in yellow fever quarantine work, was engaged in health work in St. Tammany Parish for four years and served during the World War.

Society News.—At a meeting of the Bexar County Medical Society, January 5, Dr. Witten B. Russ, San Antonio, read a paper on "Rôle of the Irritable Colon in Surgery," and Dr. Daniel A. Russell, San Antonio, on "Practical Treatment of Sinusitis in Children."——The Dallas County Medical Society, January 12, voted to discontinue the use of the classified telephone directory for listing the names of physicians after the issue that is now being published; Dr. Eugene R. Carpenter addressed the society on "Differential Diagnosis of Chronic Forms of Headache," and Dr. Ramsey H. Moore on "Mastoiditis in Infancy."——Dr. Afranio do Amaral addressed the El Paso County Medical Society, recently, on treatment of snake bites, and Col. Martin L. Crimmins, U. S. Army, retired, gave a summary of the research work that had been done in San Antonio on poisonous snakes.——Dr. Claude L. Goodall, Waco, addressed the Falls County Medical Society, January 9, Marlin, on "Hypertrophic Pyloric Stenosis in Infants."——Dr. Solomon D. David addressed the Harris County Medical Society, recently, on "Leggs' Disease in Its Late Stage with Report of Cases," and Dr. Winfred Wilson, Memphis, on pyelitis. At a meeting of the society, January 4, Dr. Samuel Gibbs Milliken, Houston, read a paper on sickle cell anemia.——Drs. Samuel P. Vineyard addressed the Potter County Medical Society, January 9, Amarillo, on "Lobar Pneumonia"; George M. Cultra on "Influenza," and Don S. Marsalis on "Complications of Lobar Pneumonia with Special Reference to Empyema."

WASHINGTON

Hospital News.—The Virginia Mason Hospital has purchased the lot adjoining its present location at Terry Avenue and Seneca Street, Seattle, and will construct an addition during the year.——St. Joseph's Hospital, Bellingham, opened its new seventy-five bed H. A. Compton Pavilion to public inspection, January 15.

Walla Walla Schools Were Not Closed.—In "News of Epidemics," THE JOURNAL, February 4, stated that the schools of Walla Walla had been closed on account of smallpox. The city and county health officer, Dr. George H. T. Sparling, writes that the schools have not been closed on account of an epidemic, that his experience shows that closing schools has no advantage, and that strict health supervision of children while in school is much better. There is no excuse for closing schools on account of smallpox, he says, when we have vaccination as an absolute preventive. More than 4,000 students in this county have been vaccinated and those that have not must remain out of school when smallpox is in the

community. The few cases which have occurred in and around Walla Walla this winter apparently have been mild.

Society News.—At the midwinter meeting of the North Pacific Pediatric Society, Seattle, January 28, the morning was devoted to the presentation of cases at the Children's Orthopedic Hospital. Papers were read in the afternoon, among others, by Drs. Stanley Graham, Vancouver, B. C., on "Intussusception"; James T. Mason, Seattle, "Practical Points in Treatment of Undescended Testes in Children," and Herbert E. Coe, Seattle, "After-Care of Poliomyelitis."—— Dr. James Tate Mason will address the King County Medical Society, Seattle, March 5, on "Postoperative Results in Peptic Ulcers," and Dr. Charles F. Eikenbary on "Supracondylar Fractures of the Elbow"; Dr. Harold Brunn, San Francisco, addressed the society, February 20, on "Cancer of the Lung"; Dr. Casper W. Sharples on "Postoperative Complications of Appendicitis," and Dr. Mark W. McKinney on "New Classification and Treatment of Gangrenous Appendicitis."

WISCONSIN

Hospital News.—The Lions Club of Milwaukee has presented to the Milwaukee Children's Hospital a specially constructed machine for the administration of oxygen which was the second one to be installed in that city.

Society News.—Dr. Arthur F. Byfield, Chicago, addressed the Milwaukee Academy of Medicine, January 24, on "Matters of Hematology of Interest to the General Practitioner," and Dr. Frank W. Mackoy, Milwaukee, "Multiple Lesions of the Gastro-Intestinal Tract as Revealed by the Roentgen-Ray"; Dr. Arthur W. Rogers, Oconomowoc, was elected president of the academy for 1928.

Quack William M. Horner Again Convicted.—Newspapers in Appleton, Wis., record the arrest of William M. Horner on the charge of violating the Medical Practice Act of the State of Wisconsin. This is said to be his third conviction in Wisconsin. In the present instance, Horner was found guilty and fined $500. Horner, it seems, has been acting as an associate of another quack, one C. F. Lahn, formerly of Shawano but now of Appleton. In 1926, Horner was in Manitowoc, operating the "Perfect Health Clinic."

Personal.—Dr. John M. Albino has been appointed school physician of Racine to succeed Dr. Russell M. Kurten, resigned.——Dr. Frederick A. Thayer has been elected president of the Beloit Physicians and Surgeons Club.—— Dr. Harry H. Ainsworth, Birchwood, has been appointed a member of the state board of health succeeding Dr. Lyman A. Steffen, Antigo.——Dr. Frank F. Bowman has been appointed health officer of the city of Madison, effective March 1, for a term of two years at a salary of $4,500 a year to succeed Dr. Alexander M. Carr, who resigned last summer. Dr. Bowman has been state epidemiologist.

GENERAL

Anniversary of Russian Journal.—The *Vratchelnoie Dielo* celebrated its tenth anniversary, January 1. This medical journal is being published by a group of professors of Kharkov University; among its editors is Professor Zlatogoroff, who visited the United States recently.

Former Professor Sues Scientists.—John A. Detlefsen, Sc.D., former professor of genetics, Wistar Institute of Anatomy, has brought suit for $46,500, according to the *Atlantic Medical Journal*, against a dozen scientists and professors for alleged violation of contract, claiming that he was discharged as associate editor of *Biological Abstracts* last May without justification but that his services were accepted until October.

Diphtheria Was More Prevalent Everywhere.—During the last quarter of 1927, diphtheria was more prevalent in practically every country of Europe than during the corresponding period of the previous two years. It did not occur in the form of epidemics but in a slow and moderate increase beginning in the late summer and reaching its maximum in November. In France, for example, 2,840 cases were reported during this quarter in 1925 and 4,309 cases in 1927. The increase in the United States which began in the previous winter continued during the fourth quarter of 1927, but it was less than in the other quarters of the year; according to *Epidemiological Reports* of the Health Section of the League of Nations, the increase was 6.5 per cent in the fourth quarter, 40.1 per cent in the first, 56.6 in the second and 29.5 in the third quarter.

Committee to Study Rheumatoid Conditions.—A committee for the study, prevention and treatment of arthritis and rheumatoid conditions will meet in Philadelphia, March 17, to inaugurate the first coordinated attempt in this country to deal with the rheumatoid problem. The committee has been established by Dr. Louis B. Wilson, director, Mayo Foundation, Rochester, Minn., to cooperate with the movement under way in Europe, where arthritis is a social problem and where large hospital provision is being made for the exclusive care of arthritic persons. The members of the American committee are Drs. Ralph Pemberton, 2120 Sansom Street, Philadelphia, chairman; Joseph L. Miller, Chicago; Robert B. Osgood, Boston; Charles C. Bass, New Orleans; Russell L. Cecil, New York; Melvin S. Henderson, Rochester, Minn.; J. Archer O'Reilly, St. Louis; Russell L. Haden, Kansas City; Rea E. Smith, Los Angeles, and Lewellys F. Barker, Baltimore. Dr. Pemberton has visited several of those active in this movement in Europe. In London the Red Cross has arranged to give a demonstration of the value of physical therapy in treating arthritis with the aim of increasing facilities and reaching more of the patients. (THE JOURNAL, February 25, p. 629.)

Nominations for Leslie Dana Medal.—Nominations will be received by the National Society for the Prevention of Blindness, 370 Seventh Avenue, New York, until May 15 for the fourth award for the Leslie Dana medal, presented annually through the Missouri Association for the Blind to the person selected from the nominations received by the National Society for the Prevention of Blindness. The medical profession and ophthalmologic societies are invited to submit names of persons deemed worthy of this honor under the following conditions set forth in the deed of gift: (*a*) long meritorius service for the conservation of vision in the prevention and cure of diseases dangerous to eyesight; (*b*) research and instructions in ophthalmology and allied subjects; (*c*) social service for the control of eye diseases; (*d*) special discoveries in the domain of general science or medicine of exceptional importance in conservation of vision. The first Leslie Dana medal was awarded to Dr. Edward Jackson, Denver; the second to Miss Louisa Lee Schuyler, New York, and the third to Dr. Lucien Howe, formerly of Buffalo and now of Cambridge, Mass. The award will take place during the annual meeting of the American Academy of Ophthalmology and Otolaryngology in St. Louis.

Study of Parks for Recreation Purposes.—At the request of President Coolidge, a national survey of municipal and county parks was undertaken about three years ago by the Playground and Recreation Association of America in cooperation with the American Institute of Park Executives for the purpose of gathering information and formulating principles to help meet the recreation needs of the public. A personal visit was paid to most of the cities of more than 8,000 population, and a questionnaire was sent to smaller municipalities. In all, 2,764 municipalities and forty-five counties were reported on. This vast amount of material about city and county parks will be published early this year in two volumes entitled "Parks: A Manual of Municipal and County Parks." There are more than 400 illustrations, about 1,200 pages, and facts, figures and diagrams on parks which heretofore have not been available. President Coolidge, in his introduction to the book, says in part:

> Play for the child, sport for youth, and recreation for adults are essentials of normal life. It is becoming generally recognized that the creation and maintenance of outdoor recreation facilities is a community duty in order that the whole public might participate in their enjoyment. This presents a particular challenge to municipal and county administrations. I am hopeful that the results of this study may be widely used to the end that our people, even in cities, may not be deprived of opportunities for wholesome play and recreation out of doors.

College of Physicians to Cruise on Caribbean.—Following the twelfth annual clinical session of the American College of Physicians, New Orleans, March 5-9, a party of not more than seventy-five members will sail for Havana, Cristobal, and the Canal Zone, where clinics have been arranged at the Ancon and Santo Tomas hospitals, the Herrick Clinic, Panama, and at Castilla, Honduras, at a United Fruit Company hospital. The party will return, March 26. The program of the New Orleans meeting includes symposiums on epilepsy, diabetes, tuberculosis and infectious diseases. There will be addresses also by Maud Slye, Chicago, on "Cancer and Heredity"; Drs. Aristides Agramonte, Havana, on "Research in Yellow Fever"; Joseph Sailer, Philadelphia, "Cardiac Conditions Counterindicating the Use of Digitalis;" Hilding Berglund, Minneapolis, "Liver Diet in Pernicious Anemia," and Cyrus C. Sturgis, Ann Arbor, Mich., on "Treatment of Pernicious Anemia with a Liver Fraction"; Charles T. Stone, Galveston, Texas, "Occurrence of Severe Anemia in Myxedema"; William W. Duke, Kansas City, Mo., "Diagnosis and Treatment of the Anemias"; Frank R. Menne, Portland, Ore., "Effect of Iodine on Histopathology of the

Thyroid Gland in the Instance of Hyperthyroidism"; Leonard G. Rowntree and George E. Brown, Rochester, Minn., "Studies in Blood Volume with the Dye Method"; David P. Barr, St. Louis, "Multiple Myeloma." Addresses of welcome will be given by Dr. James Birney Guthrie, president, Orleans Parish Medical Society; Albert B. Dinwiddie, LL.D., president of Tulane University, and Dr. Charles C. Bass, dean and professor of experimental medicine, Tulane University of Louisiana School of Medicine, and by Mayor O'Keefe. About half the time will be devoted to clinics at hospitals in New Orleans.

The Oldest Function of the Public Health Service.—For 129 years, the government has been furnishing medical aid to the American Merchant Marine; that is, the privately owned vessels and a smaller number of merchant vessels operated by the government. This, the oldest function of the U. S. Public Health Service, was the specific purpose for which the service was organized under the act of July 16, 1798. Sick and injured sailors for more than a century have taken refuge in medical relief stations now operating in 152 ports of the United States and its possessions. During 1927 there were 356,746 applications for treatment or examination, 1,288,061 hospital days given and 632,341 outpatient treatments supplied. Seamen paid 20 cents a month for this service from 1799 to 1870; 40 cents from that time until 1884. The aggregate of all such collections was $15,794,807.63, while during this time more than $16,000,000 was spent for the maintenance of marine hospitals and relief stations, and nearly $3,500,000 for new constructions and repairs. The tonnage tax first levied on American and other ships in 1884, to be devoted to the maintenance of the marine hospitals, yielded to the federal treasury in 1927 a revenue of $2,222,223.01. The U. S. Public Health Service details medical officers also to care for personnel of the U. S. Coast Guard, numbering about 11,000 officers and men, as it does for injured employees of the government who are patients of the U. S. Employees Compensation Commission, and these have been increased by the Longshoremen's and Harbor Workers' Compensation Act, which affects about 400,000 men. The government, which is the largest employer of labor, pays compensation for disabling injuries and provides for retirement with pensions for employees grown old in its service. The U. S. Public Health Service last year made more than 103,000 physical examinations not related to treatment, of which 22,090 were for applicants seeking civil service positions. A 250-bed marine hospital for Cleveland has been proposed to accommodate patients of the veterans' bureau also in that port. It will be built from funds derived from the sale of part of the present site which, in 1837, cost the government $12,000 and a portion of which recently sold for more than $1,000,000.

PHILIPPINE ISLANDS

Epidemic of Pneumonia.—An epidemic of bronchopneumonia started, February 6, among 500 Filipinos en route to Hawaii on board the *President Cleveland*. Seventeen of the Filipino steerage passengers died and were buried at sea before arriving at Honolulu, February 16, and fourteen others were seriously ill. Cabin passengers were not involved.

Natives Who Die Without Medical Care.—Seventy per cent of those who died in the Philippine Islands last year were without any kind of medical care during the entire period of their illness. Even in Manila, where there appears to be an abundance of physicians and nurses, 60 per cent of those who died did not have medical care; in some provinces the percentage was 80. Mr. C. D. Alcott, writing from Manila for the New York *Herald Tribune*, bases these statements on a survey made by the bureau of public health and the Philippine chapter of the American Red Cross. He says that in many villages there is one physician to five or six thousand persons. Unlicensed practitioners and quacks outnumber the graduate physicians and nurses many times, but even patients treated by these were included among those who received medical treatment in this survey. Progress has been made in educating the people in sanitation and health matters in the last twenty-five years, but only the surface of the work to be done has been touched. The Red Cross has dental clinics throughout the islands, employing eighty-six dentists. The health bureau has a similar chain, but its task is huge. Living conditions in the old walled city in Manila were found a few months ago to be deplorable. Large families were occupying "nooks in the old walls"; other large families occupied a single room in old buildings and were taking in roomers. The old fortress, which is about two miles in circumference, five blocks wide and twelve blocks long, held about 13,000 people. Following an investigation of the sanitary situation under the supervision of Major Arthur Parker Hitchens, U. S. Army, the walled city has been ordered cleaned up and thinned out. If this campaign succeeds within a year Manila's remnant of the past will be cleaned up yet still retain its old architecture and lore.

FOREIGN

Spain's Birth Rate Falls.—The Spanish government is seriously considering the decrease in the Spanish birth rate. According to the New York *Times*, the birth rate in 1926 was 29.9 per thousand, having decreased since 1913 from 30.03. The principal reason assigned is the diminishing number of marriages. Despite the offer of prizes by the government to parents to encourage large families and the increasing of salaries of such parents who are employed by the government, and despite the provision of free educational facilities through college for children of families of more than eight, the size of families in Spain is gradually shrinking.

Testimonial to British Editor.—A committee of distinguished scientists has taken steps to forward the establishment of a testimonial to the services to medical journalism and to the science and practice of medicine of Sir Dawson Williams, who recently retired as editor of the *British Medical Journal* after thirty years' service. The committee, which met, January 20, at the Royal Society of Medicine, hopes that there will be a large number of contributions representing the profession as a whole. Checks should be sent to Sir St. Clair Thomson, treasurer of the fund, 64 Wimpole Street, W. 1., London, with the envelop marked "Dawson Williams Testimonial."

Where Yellow Fever Persists.—Yellow fever has not been reported in the Gold Coast Colony, Africa, since October, according to the Health Section of the League of Nations. However, the number of cases reported during 1927 was considerably higher than in any year since the reappearance of yellow fever in this area. An outbreak occurred in the Belgian Congo in the week ending Dec. 23, 1927. Six cases were reported at Dakar on the Guinea Coast in December, four cases in Liberia in June, and one at Abidjan on the Ivory Coast in December. There were scattered cases reported at other places in West Africa. Nigeria had been exempt since September.

Conferences on Rheumatic Diseases.—A Conference on Rheumatic Diseases is to be held at Bath, England, May 10-11, 1928. Sir George Newman, chief medical officer of the British ministry of health, has kindly consented to act as president of the conference. There will be three sessions on (1) social aspects, presided over by Lord Dawson of Penn, physician to King George; (2) causation, presided over by Sir Humphry D. Rolleston (regius professor of physic, University of Cambridge), and (3) treatment, presided over by Sir Edward Farquhar Buzzard (regius professor of medicine, University of Oxford). The local honorable secretary is Dr. Vincent M. Coates, 10, Circus, Bath, England.

New Institute of Biochemistry at Oxford.—The new institute of biochemistry at Oxford University, England, has been formally opened. The departments of biochemistry and physiology have in common a large lecture room and a library; the second floor, which is entirely given over to research, will accommodate twenty workers; there is also an aquarium, an operating theater, an animal bathroom and a sterilizing room, and on the roof there is a small open-air laboratory.

Two classrooms on the first floor are separated by glass partitions, so they can be used as one room accommodating 100 students; leading from the classrooms are dark rooms and the balance room. A mezzanine floor provides a restroom, a room for constant temperature work, a research room and an animal house. The partitions are constructed so that they can be moved easily if rearrangement of the rooms should be desirable. The main lecture theater is on the ground floor, where there are also dark rooms, a work shop and additional research rooms. There are two electric elevators. The building was made possible by a gift of £75,000 from the Rockefeller Foundation, New York. The chair of biochemistry, which was endowed in 1920 by Mr. Whitley, was occupied by Dr. Benjamin Moore until his death in 1922, and since that time by Dr. Rudolph A. Peters.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 5, 1928.

Social Conditions and Cancer Mortality

The decennial supplement of the registrar-general, just published, shows that cancers in certain parts of the body are much more frequent in the poorer sections of society. These parts are the mouth, tongue, larynx, throat and stomach, and the skin. Cancers of all other parts of the body are equally distributed over the whole male population. The registrar-general offers the suggestion that the areas in which cancer is more common among the poorer sections of society are those which are "exposed to irritation by environmental influences in the shape of food and drink, and since there is a "sharp line of demarcation at the pylorus" this may well be the true explanation. The group of cancers which are much commoner among poor people than among the well-to-do includes 51 per cent of all cancer cases—another fact of first-rate importance. A further fact is that men are much more liable to suffer from cancer of the "exposed areas" (i. e., mouth to stomach and skin) than are women. With regard to occupation, the position of the clergy of all Protestant denominations is at the head of the list of occupations which have the lowest cancer mortality. The extent of their advantage over any other occupation and the fact that cancer mortality is light also for Roman Catholic clergy seem to make it impossible to attribute it merely to chance. Among occupations showing the highest mortality from cancer of the mouth, throat and stomach are those of waiters, barmen and cellarmen. Cancer of the tongue is more frequently encountered in barmen than in any other occupational group. The special association of cancer of those sites with dietetic conditions in confirmed to some extent by these discoveries. The following table is given:

Occupations in Order of Cancer Mortality (All Sites)

Lowest Mortality	Highest Mortality
1. Ministers (not Anglican)	1. China kiln and oven men
2. Anglican clergy	2. Puddlers
3. Bank officials	3. Gas stokers
4. Machine compositors	4. Hat formers
5. Leather goods makers	5. Cotton spinners and piercers
6. Stone masons and quarriers	6. Barmen
7. Railway signalmen	7. Cellarmen
8. Photographers	8. Tin and copper miners (underground)
9. Grain millers	9. Cutlery grinders
10. Farm bailiffs	10. Waiters

In the case of the cotton spinners and gas stokers, cancer occurs mostly on the skin. Fishermen and bargemen, and, to a lesser extent, seamen show an excess of skin cancers over the average rate for all occupied and retired males: an excess of 88 per cent for seamen, compared with that of 306 per cent for fishermen and 286 per cent for bargemen. The suggestion is offered that in some of these cases tar may be the exciting cause. It is further pointed out that nearly all occupations noted as showing excessive skin mortality from cancer show also an excessive mortality from cancer in sites other than the skin. Cancer, then, of the skin, mouth, throat and stomach appears to be as definitely subject to social influences as does tuberculosis. "It appears," says the registrar-general, "that a large proportion at least of cancer mortality is of a preventable nature, for we must suppose that, if the conditions of life of all sections of society could be assimilated to those of its upper ranks, mortality from cancer of the exposed sites would fall, for all classes, to the class I level." Cancer in the "exposed areas" (tongue, throat and stomach) is 58 per cent of the average in social class I (upper and middle), and 140 per cent of the average in social class V (unskilled workers). The birth rate increases from the highest to the lowest in the social scale.

The Jews Affected by the Falling Birth Rate

The falling birth rate of England was again illustrated in my letter of January 28 (THE JOURNAL, February 25, p. 628). It is now found to affect the Jews, despite their prolificness. In the great Jewish quarter of London, Whitechapel, according to the report of Dr. D. L. Thomas, health officer, the birth rate was between 30 and 40 per thousand of the population before the war but is now down to 13 per thousand. Jewish people there are going in for smaller families, and added to this is the fact that the young Jews are migrating to other parts of London when they get married. The result is that there is a larger population above the age of childbearing in Whitechapel today. Mr. D. Tscherniakoff, secretary of the Jewish Health Organization of Great Britain, says: "I think there are three main reasons for the decline. First there is the tendency to a lower birth rate among the general population of western Europe. Then there is the economic cause. Jews are not marrying so early as they used to, owing to financial handicaps. Consequently the period for having children is limited. Lastly there is the great spread of knowledge of birth control. Among the Jews specifically there is also another factor which strengthens these tendencies. It is the slackening, among certain sections of Jews, of the strong hold which religion asserted over them, particularly with regard to its view on the sanctity of family life."

Health Education

A "Handbook of Suggestions on Health Education," prepared for the consideration of teachers and others concerned in the work of public elementary schools, is issued by the board of education on the authority of Sir George Newman, the chief medical officer. The physical health and condition of the child are, in the board's view, the basis on which all mental education must necessarily be founded. Not only is the physically unfit child likely to be below the average of mental capacity, but the development of the brain and mind is largely influenced and promoted by the muscular activities. Accordingly, the purpose of hygiene and physical training is not only to improve the physical condition of children but to aid in the development of their mental powers and in the formation of character. Upward of 20 per cent of children in attendance at school are suffering from acute disease needing treatment, and the practice of hygiene is necessary as a defense measure—a means of cure or prevention. In a child under 10 or 11, hygiene is to be taught as a rule by habit training. The first part of the "Suggestions" consists of subject matter for health practice and talks for young children, classified under various heads, which include cleanliness, clothing, food, fresh air and sunlight, breathing, care of the eyes, ears and teeth, "safety first," and physical exercises and games. Cleanliness should be drilled into children till it has become a habit, and they can be accustomed to fresh air in the class room, put through a class breathing exercise, and trained in right posture and other matters. The second part relates to the instruction of older children, and contains outlines of health lessons for the information and guidance of teachers.

A Central Council for Health Education

On the initiative of the Society of Medical Officers of Health, a central council for health education has been constituted to advise and assist local authorities on the education of the people in health matters. It is expected that by this means much of the overlapping and waste of effort resulting from the present multiplicity of health organizations will be avoided. A systematic national plan for health

propaganda is most desirable, as the public health act of 1925 empowers municipalities to engage in health education work, and the innumerable offers of assistance from so many voluntary bodies necessitate a coordination in this respect. The council will therefore represent local authorities, education committees, insurance committees, the Society of Medical Officers of Health, and other bodies. The friendly societies and approved societies under the national health insurance act will be invited to cooperate in the development of health and education.

International Convention on Cancer Research

At the quarterly meeting of the grand council of the British Empire cancer campaign it was announced that an international convention on cancer research was being convened for next July in London. The Royal Society of Medicine had placed its headquarters at the disposal of the British Empire cancer campaign for the purposes of the meetings of the convention. Sir John Bland-Sutton, past president of the Royal College of Surgeons and vice chairman of the campaign, would be president of the convention. The work would be divided into sections on pathology, diagnosis, medical treatment, surgical treatment, radiologic treatment, and public health and statistics. Chairmen had been appointed for some of these sections: Sir Thomas Horder, with Sir William Willcox as vice chairman, of the diagnosis section; Professor Lazarus-Barlow, pathologic section; Sir Charles Gordon-Watson, surgical treatment section; Prof. Sidney Russ, with Dr. Robert Knox as vice chairman, radiologic treatment section, and Lieut.-Col. F. E. Fremantle, public health and statistics section. Invitations have been sent to all parts of the world to those whose names are associated with modern research into the cancer problem, and all the universities and medical schools of the United Kingdom have been invited to send delegates to the convention.

Marriages Wrecked by Birth Control

A woman physician, Dr. Alice Hutchison, speaking on the psychology of parenthood at a conference of health visitors and nurses, declared that birth control had wrecked a number of marriages, because the maternal urge could not be quenched so easily. If they put a difficulty in the way of that urge they would find women harboring animosity against their husbands. He might argue that she had agreed to have no more children, but the fact remained that she did not know how strong the urge was. Birth control was producing that terrible monstrosity, the only child. They might come to speak, not of drink, but of "only-childism" as the greatest curse of the country.

A Pole Appointed to First Chair of Anthropology in a British University

Professor Manilowski, who was recently appointed to the chair of anthropology in the University of London, as chief guest at a luncheon given by the Polish Circle expressed his sense of the honor which had been done him in appointing him to the first chair of anthropology which had been founded in any British university. The British Empire, though essentially conservative, showed itself aware of vital problems in due time, and it had unostentatiously recognized the importance of a scientific knowledge of what race really meant and differences in culture really implied. Anthropologic posts had been instituted in the colonies, and a chair of anthropology had now been founded in the capital of the empire. It was a great tribute to the impartial mind of the British that they had chosen a foreigner. The fact would encourage him to carry on the work with due devotion to the interests which were involved in sound teaching on interracial relations, and to the development of a deeper knowledge of the subject-races of the British Empire.

PARIS

(From Our Regular Correspondent)

Jan. 25, 1928.

A Prize in Literature Won by a Physician

The award of the prix de l'Académie Goncourt, which is offered each year for the best recent novel, has recently been bestowed on Dr. Maurice Bedel in recognition of his new novel "Jerome, 60 North Latitude." The scene of the novel is located in Norway. The story describes a love intrigue in which a young foreign scientist sojourning in the region and a lovable maiden of the Northland are the principals. It brings out the extremely tolerant attitude with which a betrothal is regarded in Nordic lands, as well as in Japan. M. Maurice Bedel is not practicing medicine, but since completing his medical studies has been devoting himself to archeology, ethnography and belles-lettres. He was, during the war, a member of the army medical corps, with the relative rank of major. He received two wounds, and a title of the Legion of Honor was bestowed on him on the field of battle. While serving in the Vosges Mountains, with a detachment of *chasseurs-skieurs*, he developed a great passion for skiing, and made, in that connection, the acquaintance of a number of Norwegian volunteers. After the war, he visited his new friends in their native land, and it is thought that in his novel he has betrayed some of their secrets. In the press interviews that he granted after his book was awarded the *grand prix*, he stated that, although the medical profession has become foreign to him, he was of the opinion that he owed to his biologic studies his aptitude in applied psychology and his interest in ethnographic problems, which appeared to have brought success to his novel. Other physicians who have abandoned their profession, or who have never practiced it, but who have won names for themselves in contemporary French literature, have expressed themselves in a similar manner, to mention only Duhamel, Roland Dorgelès and Paul Voivenel. Possibly literature will, in the future, furnish more frequently an outlet for an overcrowded profession, and perhaps the psychologic qualities of our modern novels will be improved by the influx of a foreign strain.

Serotherapy in Typhoid

M. Weinberg, head of a service at the Institut Pasteur, prepared, fifteen years ago, serum with cultures of *Bacillus perfringens* and anaerobes that are associated with it. This serum rendered remarkable service during the war in cases of gas gangrene. Weinberg has recently communicated to the Société de biologie the results of his use of the same serum in cases of typhoid in which *Bacillus perfringens* had been discovered in abundance in the stools of the patients and even in the blood, creating thus an added infection, which renders the prognosis of typhoid much more grave. In the two cases reported by Weinberg, the use of the serum brought about a rapid defervescence and an improvement in the general condition. M. Weinberg advocates always searching for anaerobes in the stools of typhoid patients, as they are found frequently, and, when they are present, he recommends the use of the serum, as he is convinced that it will increase greatly the chances of recovery.

Accidents Due to Barbital Compounds

Poisonings resulting from barbital compounds, which are being used more and more and which pharmacists dispense to the public without a medical prescription, are becoming frequent, some being due to mischance or to the increasing use of overlarge doses, and others to doses taken with suicidal intent. There have been also criminal poisonings. M. André Tardieu, who in collaboration with M. Simon Camps made in 1924 a somewhat sensational study of the problem, recently took up the cudgels again in an address before the Société de

thérapeutique. He makes an insistent demand that these products be added to the list of substances that pharmacists may not dispense to the public without a prescription—that is to say, that they be considered as toxic substances. The numerous observations of accidents described by physicians have made known a number of new symptoms of this form of intoxication. M. Busquet reported a case in which the absorption of 1.5 Gm. of di-allyl-barbituric acid by a young psychopath produced a lethargy of three to four days' duration, with an elevation of temperature that gradually reached 39.5 C. (103 F.) the third day. Heretofore, it has been said that death from barbital was attended with an abnormally low temperature. M. Tardieu and M. Maitre have made similar observations—a careful examination of the subjects revealed no other organic cause of the fever. Tardieu thinks that this effect is due to the action on the midbrain (the same cerebral region attacked by epidemic encephalitis) of the nitrogenous products of disintegration issuing from the tissues injured by the barbituric intoxication, such as is observed after the experimental ingestion of a solution of sodium urate. Tardieu called attention also to various other symptoms produced by barbituric intoxication: coma-vigil, acute or subacute psychoses, lethargy with asthenia, ocular disorders, salivation and fever, toxidermia in subjects in a state of hepatic or renal insufficiency, with exanthems resembling those of measles, scarlatina or erysipelas; sometimes, in chronic intoxication of long duration, crusts resembling those of tertiary syphilids. The resolution presented by M. Désesquelle to the effect that all derivatives of malonyl urea be added to the list of toxic substances that may not be dispensed to the public except on a physician's prescription was unanimously adopted by the Société de thérapeutique.

The Serodiagnosis of Syphilis in Prostitutes

M. Chatellier of Toulouse has presented to the medical society of that city a communication which deals with the practice of requiring prostitutes to be subjected to a serologic test, from time to time, to discover syphilis. As long as France maintains the system of supervised prostitution, one cannot take too great precautions. At Toulouse, in the Hôpital de la Grave, 372 serologic examinations of prostitutes, since Jan. 1, 1927, gave 147 positive reactions. Of these patients, the vast majority did not present cutaneous or mucous manifestations, and there were scarcely twenty cases of primary or secondary syphilis during the year. The described measure, in use at Nancy and at Brest, is applied in Toulouse to all prostitutes, the serologic test being repeated every three or four months. Accordingly, every new arrival is directed by the Service médical de surveillance to the service of Dr. Chatellier or of Professor Andry. To speak only of the service for prostitutes, an average of 150 injections of arsphenamine or bismuth are given each month.

Deaths

Dr. Patein, member of the Academy of Medicine, section of the pharmacologic sciences, has died. He contributed numerous articles on organic chemistry and had been chief pharmacist of the Hôtel-Dieu in Paris.

Dr. Dagron, recently deceased, had been the collaborator of Dr. Lucas Championnière in his researches on the treatment of limb fractures by massage. Whereas the method had been previously practiced by ignorant empirics, he gave it a veritable scientific basis and acquired a great reputation thereby. A special service had been created for him in the Hôtel-Dieu.

Dr. Danysz, who has recently died, was laboratory head in the Pasteur Institute. He was the creator of a special virus for the destruction of rats. The virus was easily obtained in large quantities through cultivation in an infusion of hay, and was used to impregnate bread crusts, which were placed about the grain fields. A fatal epidemic was produced among the rats, which spread rapidly. The procedure has been applied on a large scale and has been of great service to agriculture. Danysz was a native Pole, a compatriot of Madame Curie, and was associated with the first attempts to make a physiologic application of radium after its discovery; but he did not make any remarkable discoveries.

ITALY

(From Our Regular Correspondent)

Dec. 31, 1927.

Congress of Otorhinolaryngology

Under the chairmanship of Professor Brunetti, who succeeded to the office on the death of Professor Gradenigo, the Società italiana di otorinolaringoiatria held recently in Parma its twenty-third national congress. The main topic on the program, "The Physiologic and the Clinical Aspects of the Sense of Smell," was divided into two subtopics. Professor Baglioni, of the University of Rome, presented the official paper on the physiologic aspects, and Professor Bilancioni, of the University of Pisa, opened the discussion on the clinical aspects of the subject. Baglioni, speaking of the functional examination of the various sensibilities of the nasal mucosa, divided them into general (tactile, thermic and dolorific) and specific (olfactory). Ordinarily, these two forms of sensibility are considered independently of each other, although it is probable that they are—at least, in part—interrelated. The functional examination consists of various procedures, among which the most used, at present, are: the determination of the value of the threshold (the least perceptible), the determination of the intensity, and the determination of the quality—of olfaction. The olfactometer most in use is that of Zwaardemaker. The term "olfactie" signifies the stimulus threshold of normal persons for a given odor and is expressed by the length (in centimeters) of an odorous surface. According to Baglioni, it would be preferable to make use of an apparatus by which the odorous air, instead of being aspirated by the subject, as is the case with the olfactometer, would be insufflated. A similar instrument might serve also as a tactile, chemical or thermic esthesiometer. The determination of the threshold of qualitative olfactory values—osphresiometry—is also very important. For an exact determination of the qualitative and the quantitative threshold it is necessary to establish first the physiologic olfactory zero, or the normal state of sensitiveness in a nonodorous environment, which is represented by any pure respiratory air.

Professor Bilancioni discussed, from the clinical point of view, dysosmia, dysgeusia and similar disturbances. Dysosmia manifests itself, according to the speaker, as anosmia, hyperosmia and parosmia, characterized respectively by diminution, augmentation and perversion of the sense of smell. Disturbances of the sense of smell may be produced by tumors of the temporal region, wounds, irritating gases (during the war, numerous cases of anosmia resulting from asphyxiating gases were observed), mechanical or respiratory causes, pathologic changes of the nasal mucosa, and anomalies of the nasal mucosa (in albinos, in whom the mucosa is deprived of pigment). Anosmia may develop without any apparent lesions of the nasal fossae, in which case the condition is due to nervous disturbances of peripheral or central origin. An important clinical question is as to whether or not anosmia may be cured. During the war, the sense of smell impaired by traumatic injuries was frequently restored, but in case of marked deformation or loss of substance restoration of function is impossible. Hyperosmia may be universal or partial—that is to say, it may manifest itself with reference to all or only to one or more odors. It should not be confounded with oxyosmia, an acute sensitive-

ness of the olfactory mucosa, which in some persons is a physiologic state. Ordinarily, it is a simple functional disturbance, which is related to hysteria or neurasthenia. Intense and persistent gustatory and olfactory sensations occur at times in general paralysis, in the paranoid types of dementia praecox, and in the delirium of poisoning. The speaker expounded also the modern views on the physiopathology of taste. The presentation of the papers was followed by a general discussion. Of the sessions of the congress, one was devoted to communications on rhinology, one to papers on pharyngology and laryngology, and a third to communications on otology and various subjects.

School Dental Clinics

Professor Cavallaro, of the University of Florence, in a communication to the Congress of Stomatology held in Milan, discussed the school dental clinics recently established in Italy. These clinics are in operation at the present time in the principal cities of Italy, their chief purpose being to combat, from early childhood, dental caries. Speaking more particularly of the school dental clinic in Florence, of which he is the director, Professor Cavallaro stated that the school population of the city consists of 14,000 children, 1,921 of whom received dental treatment during the school year 1926-1927, there having been a total of 3,697 professional treatments, 1,431 of which were filling operations. Personal histories were taken of all the children treated, a careful study of which reveals that in the cases of dental caries there was always a deficiency with respect to the food factor and the vitamin factor in both the offspring and the nurse.

Results of the State Examination

As has been previously mentioned, Professor Gentile, the ex-minister of public instruction, introduced a law, two years ago, requiring applicants for licensure to practice the liberal professions to submit to a special examination to demonstrate their qualifications. The first application of this law was made in 1925. In that year, 1,118 physicians, 511 pharmacists and a number of other professional men, were accepted, very few applicants being rejected. In 1926, the applicants were given more severe tests, with the result that 999 physicians and 645 pharmacists were admitted to professional practice, while a larger percentage were rejected. Of the ten university centers established by the minister, Pavia was chosen by the largest number of medicosurgical candidates (312), while Florence was selected by the smallest number. The final results of the tests for the current year have not yet been announced.

Proposed Changes in Pharmaceutic Studies

The question of reorganizing pharmaceutic studies in Italy is being discussed by the special press. The pharmacists demand the institution of a genuine degree in pharmacy in place of the certificate that is at present given to those who complete the university course in pharmacy. They ask that the whole course be reorganized according to criteria in keeping with modern demands. Professor Filippi, of the University of Perugia, recommends that the course of university study be left at four years as at present but that the fourth year be devoted mainly to pharmacologic technic—to practice work in the pharmacy of a city hospital, which should, for that purpose, be regarded as a branch of the university.

The Morbidity and Mortality of Children

In his introductory lecture of the course on the rearing and training of children, Professor Francioni, director of the Clinica Pediatrica in Bologna, called the attention of the assembly to the present demographic conditions in Italy. The statistics of the last quinquennium reveal a decline in the birth rate. If it were in accordance with the increase in population as established, the total number of births would average 1,251,000, whereas the average for the five years was only 1,127,160. The decline is more conspicuous in certain regions (Piedmont and Liguria), and is compensated for, in part, by a high birth rate in other sections of the country (Venetia and southern Italy), where there is a birth rate of from 34 to 39 per thousand of population.

According to recent statistics, the annual mortality for young children is as follows:

	Age, Years	Total No. of Deaths	No. of Deaths per Thousand Living Births	No. of Deaths per Hundred Deaths of All Ages
	0–1	142,034	127.2	21.53
	1–2	44,987	40.2	6.82
	2–3	16,383	14.6	2.48
	3–4	9,523	8.4	1.44
	4–5	6,447	6.6	0.98
Totals	0–5	219,374	197.0	33.25

These figures represent a certain measure of progress as compared with the period immediately preceding the war, when the average mortality was 217.4 per thousand living births, during the first five years of life. But the mortality and also the morbidity are still too high, Professor Francioni emphasized—especially for the first year of life, and it is therefore toward the nurslings, above all—that physicians in general and directors of institutions, in particular, must direct their attention, in order to compensate, by reduced morbidity and mortality, for the decline in the birth rate.

BERLIN

(From Our Regular Correspondent)

Jan. 28, 1928.

Drafting of a Prussian Law Pertaining to the Treatment of Patients with Mental Illness

Concerning the tentative draft of a Prussian law dealing with mental disease, a statement has been published setting forth the conditions under which a person may be committed to a *"heil- und pflegeanstalt,"* or care-taking institution, which term is to be used in the future in place of *"irrenanstalt,"* or insane asylum. The first thing necessary is evidence of the need of institutional care. Such evidence is regarded as furnished if the person must be taken to an institution for cure, treatment or care, or if the person constitutes a menace to his environment. The latter idea will be expressed somewhat differently in the new law, which will state that those patients must be committed to an institution who, in consequence of their mental disease per se or otherwise, are a menace to their environment from the standpoint of quiet, safety and order, or who are in need of supervision, protection, bodily care or medical attendance. Weak-minded persons will be considered among the class of the insane. Only when the aforementioned conditions obtain will detention in a care-taking institution be found "permissible" or be "officially demanded." Permission so to detain a psychopathic subject will be granted on the basis of a petition, which must be endorsed by a physician licensed to practice in Germany. Such endorsement by a physician must be based on a personal examination of the patient of recent date (not more than two weeks back). The physician's certificate must be presented within four weeks from the date it bears. If the patient is committed to a private institution, he must be examined within three days by a health officer or by a physician on the staff of a public care-taking institution. The authorities having jurisdiction in the matter must be informed at once of the admission of such a patient. In urgent cases, any public care-taking institution will be expected to admit at once mentally ill patients. The commitment of a mentally

ill subject must be officially ordered if the designated conditions, corresponding to the former charge of constituting a public menace, obtain. To the commitment must be attached a certificate setting forth the condition of the patient and signed by the health officer having jurisdiction or by the physician of a public care-taking institution. In urgent cases, with a view to avoiding threatened dangers, the certificate of any physician licensed to practice in Germany will suffice. Under certain circumstances, an adult mentally ill patient may be admitted on the basis of a written petition signed by himself. On the other hand, an adult patient or his legal representative may file a demurrer to his detention in an institution. For the supervision of such care-taking institutions a visiting commission must be created in Berlin and in every province of Prussia. The *"oberpräsident"* of the province or his representative shall be the chairman of the visiting commission. The other members of the commission shall include an official psychiatrist and a nonmedical person who has had experience in welfare work.

Methods of Testing the Quality of Drinking Water

The quantity of chlorine needed to destroy the bacteria in water depends on the amount of organic matter the water contains. Hence the demand that a city's water supply be tested three or four times a day. Heretofore, tests could be made only in chemical laboratories with the use of utensils designed to analyze large quantities of water. Recent experiments carried out by Hahn, Schütz and Pavlides in the Berlin Hygienic Institute have brought about a simplification of the test method, concerning which Professor Schütz has made an announcement before the Berlin Gesellschaft für öffentliche Gesundheitspflege. The testing of water can now be carried out by persons without special academic training. Hitherto a starch solution has been used for the determination of the chlorine content, but such a solution is not very stable. Schütz used a solution of alpha-naphthoflavone, which is much more sensitive than starch, absolutely stable, and gives more uniform results. Experiments with samples of water from various water systems of Germany have shown that a chlorine excess of at least 0.25 mg. is required to destroy all bacteria within five minutes.

During the discussion that followed the presentation of the paper, Professor Friedberger gave an account of experiments that he had performed with rats for the purpose of determining whether chlorination of drinking water has an unfavorable effect on the organism. He gave rats water containing four times as much chlorine as is usually employed and found that the rats thrived better than the controls who received ordinary faucet water. He concludes, therefore, that the addition of chlorine is certainly not harmful. The question was asked whether or not the fact that, during recent years, boilers and heating coils used in connection with central heating systems have rusted out soon could be ascribed to the chlorination of the water. This supposition was denied. On the west side of Berlin, where the rapid rusting has been observed, the water is not chlorinated. No change in the taste was observed on addition of 0.4 mg. per liter of water.

Alcoholic Patients in Prussian Institutions for Neurotics and the Mentally Ill

In 1925, there were 90,337 beds in the 249 Prussian institutions for neurotics and the mentally ill, as compared with 83,891 beds in 247 institutions in 1924. This denotes an increase of 6,446 beds, or 7.7 per cent. The number of patients cared for in 1925 was 143,539 (76,949 males, 66,590 females), or 14.2 per cent (16.9 per cent males, 11.3 per cent females) more than in 1924. In 1925 there were thus about thirty-eight such patients per 10,000 inhabitants, as compared with thirty-three in 1924, thirty in 1923, and twenty-seven in 1913. It is apparent, therefore, that the proportion of the prewar period has been exceeded. In 1925, the total number of deaths among the patients of these institutions was 7,249 (3,636 males, 3,613 females). The proportion of deaths per thousand patients dropped from 58.1 in 1924 to 50.5 in 1925. Excluding the neurotics, the number of mentally ill subjects treated rose from 106,919 to 119,003, an increase of about 11 per cent. The greatest increase is found among the patients treated for alcoholism, the number of which showed an augmentation of about 33 per cent as against the previous year. With the exception of the year 1923, each year since the war has shown an increase of patients treated for alcoholism, and the present figures are but slightly lower than those of the prewar period. In 1913 there were from eighteen to nineteen such patients; in 1925, there were about seventeen, per hundred thousand of population.

The Brain of Lenin

The rites performed by the government of the Russian soviet republic over the remains of the founder of that republic, Lenin, have been extended to an examination to discover to what extent the anatomic structure of Lenin's brain justified the assumption of especially high mental endowment. With the aid of Prof. O. Vogt, director of the Emperor William Institute for Brain Research in Dahlem (near Berlin), a laboratory was established in Moscow, and several physicians were trained, under the guidance of Professor Vogt, in the technic of brain examination. For a period of two years the brain of Lenin was subjected to a minute examination. The brain was subdivided into 31,000 separate specimens, all of which were conserved in such a manner that any one who, in the future, may wish to make researches on the brain of Lenin will have an opportunity to do so. The specimens needed for the present research were stained, and photomicrographs were made of them. For purposes of comparison, a number of normal brains from persons who possessed only moderate mental endowment were brought in. At the request of the public commissariat of the public health service, Professor Vogt gave, Nov. 12, 1927, a preliminary report on his observations:

"The structure of the third layer of Lenin's brain, consisting of the pyramidal cells, deserves special attention, for these cells were found to be especially well developed. The marked development of the pyramidal cells produced, of necessity, an intensification of the general activity of the various divisions of the brain. This in itself explains the outstanding nature of Lenin's intellectual life. The large number of paths proceeding from the pyramidal cells and thus uniting portions of the brain otherwise widely separated explains, furthermore, the wide range and the multiplicity of ideas that developed in the brain of Lenin, and, particularly, his capacity for quickly getting his bearings when confronted with the most complex situations and problems. The abundance of centers in which Lenin's ideas arose, and the manifold paths through which these ideas passed, explain likewise Lenin's ability to comprehend new situations and face conditions as they actually are. This multiplicity of ideas, together with the wide range and the rapidity of his powers of conception, produced in Lenin unusual powers of intuition. Such organized thinking can be compared with a musical work in which, in a certain unit of time, a large number of notes quickly succeeding one another is produced, whereas the thinking process of the average person may be contrasted with the slow tempo of an ordinary piano selection. Lenin's brain activity can be compared, in other words, with a whole wave of sounds, closely interwoven, rapidly tumbling over one another, yet so combined as to produce a mighty harmony. All these various aptitudes form, in their entirety, the basis of what was universally recognized as a peculiar type of genius. Thus the key to a materialistic view of Lenin's genius has been found."

Marriages

LAWRENCE BURTON SHELDON, Baltimore, to Miss Lois Madale Iverson Schier of Evanston, Ill., February 18.

CHARLES BARTLETT DEARBORN to Miss Mabel Osborn, both of Mount Sterling, Ill., at Quincy, February 8.

IRVINE M. FLINN, JR., Wilmington, Del., to Miss Margaret Dashiell of Princess Anne, Md., January 3.

RAPHAEL EUSTACE SEMMES, JR., to Miss Mary Alice Graves, both of Memphis, Tenn., Dec. 15, 1927.

JOHN E. WALTER, Waukegan, Ill., to Miss Anna Katherine Frahm of Atlanta, Ga., Dec. 22, 1927.

THEODORE W. DAVIS to Miss Edna Earl Tharpe, both of Nashville, Tenn., February 15.

Deaths

Valery **Havard** ⊕ Colonel, U. S. Army, retired, Fairfield, Conn.; Medical Department of the University of the City of New York, 1869; entered the Army as an assistant surgeon in 1874 and retired in 1910; veteran of the Spanish-American War; president of the Army Medical School and in charge of the library and museum division of the medical department of the U. S. Army, 1906-1910; recalled to active duty in 1917 and ordered to Havana to reorganize the medical department of the Cuban army and navy, being relieved in 1923; author of "Manual of Military Hygiene"; aged 81; died, Nov. 6, 1927, at sea, aboard the steamship *Colombo*, bound for Italy, of angina pectoris.

Sidney **Arthur Twinch** ⊕ Newark, N. J.; Medical Department of Columbia College, New York, 1890; formerly on the staffs of the Hospital and Home for Crippled Children, Home for Incurables and Hospital, Newark City Hospital and St. James' Hospital and the Irvington (N. J.) General Hospital; aged 64; died, February 7, at the California Lutheran Hospital, Los Angeles, following an operation for tumor of the prostate.

Paul **Yoer Tupper** ⊕ St. Louis; Hospital College of Medicine, Louisville, 1880; professor emeritus of surgery, Washington University School of Medicine; member of the Southern Surgical Association and the American Association of Anatomists; formerly on the staffs of the Missouri Baptist Sanitarium, the Bethesda Hospital, St. Luke's and St. John's Hospital; aged 69; died suddenly, February 1, of heart disease.

Charles **Giffen Beall** ⊕ Fort Wayne, Ind.; Fort Wayne College of Medicine, 1904; member of the American College of Physicians; served during the World War; on the staffs of the Indiana School for Feebleminded Youth, the Irene Byron Sanatorium of Tuberculosis and the Lutheran Hospital, where he died, February 7, of pneumonia, following a cerebral hemorrhage, aged 46.

John Bragg Smoot ⊕ Dallas, Texas; Beaumont Hospital Medical College, St. Louis, 1888; professor of clinical surgery, Baylor University College of Medicine; professor of surgery, Southern Methodist University Medical Department, Dallas, 1903-1914; senior surgeon to the Parkland Hospital; aged 59; died, February 2, of coronary disease and arteriosclerosis.

Charles **Thomas Nolan** ⊕ Marietta, Ga.; Atlanta Medical College, 1892; formerly secretary of the state board of medical examiners; past president of the Cobb County Medical Society; physician in charge of a sanatorium bearing his name; aged 58; died, January 26, at a hospital in Tampa, Fla., of heart disease.

Neil F. Graham ⊕ Washington, D. C.; Western Reserve University School of Medicine, Cleveland, 1862; emeritus professor of principles and practice of surgery, Howard University School of Medicine; Civil War veteran; aged 87; died, February 1, of uremia and prostatic hypertrophy.

George **Edward Baxter**, Jacksonville, Ill.; Missouri Medical College, St. Louis, 1899; member of the Illinois State Medical Society; on the staffs of the Illinois School for the Deaf and the Illinois School for the Blind; aged 56; died, January 22, of septic endocarditis and septicemia.

⊕ Indicates "Fellow" of the American Medical Association.

Stephen H. Bennett, Little Valley, N. Y.; University of Michigan Medical School, Ann Arbor, 1908; past president of the Cattaraugus County Medical Society; health officer of Little Valley; aged 56; died, January 1, at the City Hospital, Salamanca, of chronic nephritis.

Edwin W. Patterson, Washington, D. C.; Medical Department of Columbian University, Washington, 1896; served during the World War; superintendent of the Gallinger Municipal Hospital; aged 57; died, Dec. 27, 1927, at Alexandria, Va., of angina pectoris.

Charles W. Williams, Cherokee, Ala.; University of Nashville (Tenn.) Medical Department, 1873; member of the Medical Association of the State of Alabama; aged 80; died, January 22, at the Colbert County Hospital, Sheffield, of acute nephritis and hematuria.

Anthony J. Gannon, Kansas City, Mo.; College of Physicians and Surgeons, Medical Department Kansas City University, Kansas City, Kan., 1899; formerly on the staff of the Kansas City Tuberculosis Sanatorium, Leeds; aged 59; died, January 31, of nephritis.

Walter Howard Wells, Coffeyville, Kan.; Georgetown University School of Medicine, Washington, D. C., 1868; member of the Kansas Medical Society; aged 85; died, January 31, at the Bell Memorial Hospital, Kansas City, of bronchopneumonia.

Thomas Horace Miller ⊕ Captain, U. S. Army, Fairfield, Ohio; Rush Medical College, Chicago, 1893; served during the World War; entered the regular army in 1920; aged 59; was killed, February 15, when the airplane in which he was riding, fell.

Leon Joseph Roth ⊕ Los Angeles; University of Southern California College of Medicine, Los Angeles, 1901; member of the American Urological Association; served during the World War; aged 54; died suddenly, January 30, of heart disease.

Thomas Francis McParlan, New York; Bellevue Hospital Medical College, New York, 1891; member of the Medical Society of the State of New York; on the staff of St. Francis Hospital; aged 60; died, February 13, of chronic myocarditis.

Isaac S. Harold, Indianapolis; Physio-Medical College of Indiana, Indianapolis, 1889; formerly professor of nervous diseases at his alma mater; aged 73; died, February 6, as the result of a cerebral hemorrhage suffered a year ago.

Early Braxton Turnage, Tucson, Ariz.; Tulane University of Louisiana School of Medicine, New Orleans, 1920; member of the Arizona State Medical Association; aged 37; died, January 15, of accidental carbon monoxide poisoning.

Thomas Allen Fitzgerald, Missoula, Mont.; Trinity Medical College, Toronto, Ont., Canada, 1888; member of the Medical Association of Montana; aged 59; died, Dec. 24, 1927, at St. Patrick's Hospital, of subacute nephritis.

Frederick William Woeppel, Wahoo, Neb.; Creighton University School of Medicine, Omaha, 1905; aged 51; died, February 1, at the Evangelical Covenant Hospital, Omaha, of injuries received when struck by an automobile.

James George Grant ⊕ Akron, Ohio; Bellevue Hospital Medical College, New York, 1886; formerly on the staff of the Akron City Hospital; aged 66; died, January 29, of cerebral hemorrhage and arteriosclerosis.

Frances Cecilia James, Melrose, Mass.; Woman's Medical College of Pennsylvania, Philadelphia, 1886; aged 72; died, January 30, in the New England Hospital for Women and Children, of heart disease and nephritis.

Orion Asbury Grantham ⊕ Littleton, Colo.; Barnes Medical College, St. Louis, 1908; member of the city council; aged 46; died, January 24, at Custer, S. D., of a skull fracture received in an automobile accident.

Daniel Leo Brady, Potosi, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1909; member of the State Medical Society of Wisconsin; aged 42; died, February 13, of cerebral hemorrhage.

James G. Field ⊕ Captain, U. S. Navy, retired, Washington, D. C.; Medical College of Virginia, Richmond, 1885; aged 65; died, Dec. 8, 1927, at the U. S. Naval Hospital, of bronchopneumonia and tularemia.

Parke Woodbury Hewins, Boston; Harvard University Medical School, Boston, 1883; member of the Massachusetts Medical Society; aged 72; died, February 4, at his home in Wellesley, of coronary sclerosis.

Ernest Cornish Baynard ⊕ Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1909; pro-

fessor of urology, at his alma mater; aged 40; died, February 8, of pneumonia.

William Ira Vandeveer, Blue Grass, Iowa; Homeopathic Medical College of Missouri, St. Louis, 1893; formerly bank president; aged 68; died, February 16, at the Mercy Hospital, Davenport.

Charles W. Sawyer, Elizabeth City, N. C.; University of Maryland School of Medicine, Baltimore, 1885; aged 70; died, Dec. 18, 1927, of acute dilatation of the heart and pulmonary edema.

Francis W. Harper, Irvona, Pa.; College of Physicians and Surgeons, Baltimore, 1896; member of the Medical Society of the State of Pennsylvania; aged 62; died, January 3, of pneumonia.

Napoleon B. Crawford, Eureka, Ill.; Bellevue Hospital Medical College, New York, 1864; member of the Illinois State Medical Society; aged 88; died, January 29, of acute bronchitis.

Harriet Elmira Reeves, Melrose, Mass.; Boston University School of Medicine, 1892; member of the American Psychiatric Association; aged 69; died, February 13, of acute otitis media.

Whiteman F. Taylor, Ashland, Kan.; Kentucky School of Medicine, Louisville, 1881; member of the Kansas Medical Society; aged 70; died, February 10, of angina pectoris.

Robert W. Rea ✠ Plattsburg, Mo.; Missouri Medical College, St. Louis, 1885; aged 67; died, January 23, at the Missouri Methodist Hospital, St. Joseph, of pneumonia.

Adonijah William Parrish, Kirksville, Mo. (licensed, Missouri, 1883); member of the Missouri State Medical Association; aged 75; died, February 2, of arteriosclerosis.

James Algie, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1878; aged 69; died, January 16, at St. Petersburg, Fla., of potassium cyanide poisoning.

Charles W. Kirtland, Jackson, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1891; aged 60; died, January 31, of valvular heart disease.

Isaac N. Curd, Richmond, Va.; Medical College of Virginia, Richmond, 1860; Confederate veteran; aged 92; died, February 2, of acute dilatation of the heart.

Kenneth Rayner Glennan, Washington, D. C.; Maryland Medical College, Baltimore, 1912; aged 43; died, February 6, at the Providence Hospital, of pneumonia.

Charles W. Cady, Mabel, Minn.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1877; aged 81; died, January 24, of hypertrophy of the prostate.

Isaac Loper Hardenbrook, Richmond Hill, N. Y.; Medical Department of the University of the City of New York, 1883; aged 75; died, Dec. 31, 1927, of pneumonia.

William L. Brock, Sparta, Tenn. (licensed, Tennessee, 1889); member of the Tennessee State Medical Association; aged 74; died, January 27, of influenza.

John Evans Gernand, Rossville, Ill.; University of Michigan Medical School, Ann Arbor, 1894; also a druggist; aged 64; died, February 5, of heart disease.

Max H. Hazay ✠ New York; Columbia University College of Physicians and Surgeons, New York, 1903; aged 48; died, February 14, of chronic myocarditis.

Anthony A. Dorszynski, Milwaukee; Wisconsin College of Physicians and Surgeons, Milwaukee, 1902; aged 51; died January 1, of bronchopneumonia.

Joseph B. Waynick, South Bend, Ind.; State University Iowa College of Medicine, Iowa City, 1882; aged 71; died, recently, of chronic rheumatism.

Robert Scott Mahan, Havana, Kan.; University of Louisville (Ky.) School of Medicine, 1898; aged 73; died, Nov. 18, 1927, of angina pectoris.

John I. Fowlkes, Hamlet, N. C.; Atlanta College of Physicians and Surgeons, 1903; aged 54; died, January 2, of arteriosclerosis.

James A. Bundy, Kankakee, Ill.; College of Physicians and Surgeons, Keokuk, 1885; aged 70; died, February 3, of paralysis.

Wesley Bibb Kerr, Dudley, Mo.; Chattanooga (Tenn.) Medical College, 1892; aged 66; died, January 30, of heart disease.

Joseph Douglas Morris, Seattle; Chicago Medical College, 1863; aged 94; died, January 22, of lobar pneumonia.

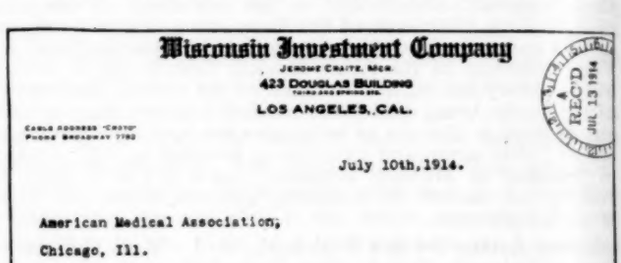
Bureau of Investigation

THE TUBERCLECIDE FRAUD

Charles F. Aycock, "Consumption Cure" Faker Debarred from the Mails

Charles F. Aycock has for years sold a fraudulent "cure" for consumption called "Tuberclecide." This nostrum was first exposed nearly 17 years ago in THE JOURNAL, May 13, 1911. At that time Tuberclecide sold at $15 for a two-ounce bottle. When examined in the A. M. A. Chemical Laboratory, the stuff was found to be essentially a solution of creosote, or guaiacol, in olive oil. On June 1, 1912, THE JOURNAL again published a story on the Tuberclecide fraud, giving the history of Aycock and showing the various schemes in which he had been engaged. At that time Aycock was operating from New Mexico but the local officials went after him so hard that he found it expedient to leave that state and go to California.

While in California, he was prosecuted by the federal officials under the National Food and Drugs Act, on the charge that the claim that Tuberclecide was an effective



Wisconsin Investment Company
JEROME CRAITE, MGR.
423 DOUGLAS BUILDING
LOS ANGELES, CAL.

RECD JUL 13 1914

July 10th, 1914.

American Medical Association,
Chicago, Ill.

Gentlemen:-

You have heard of TUBERCLECIDE.

Is the correct formula of the same of any value to you? If so what amount do you offer for it.

I am the party who placed it on the market in connection with Dr. C. F. Aycock, whose partner I was for 3 years. Can you use the correct formula? If so let me know what you offer for it.

Very truly yours,

Jerome Craite

Photographic reproduction of a letter received in 1914 from Aycock's one-time partner — Jerome Craite. The American Medical Association did not entertain Mr. Craite's offer to sell the Tuberclecide "formula."

remedy for tuberculosis was false and fraudulent. In defending himself, Aycock got three men, who were legally entitled to call themselves physicians, to testify in his favor—Drs. O. M. Justice, G. A. Scrogg and M. S. Iseman. During the trial the United States attorney, who was prosecuting Aycock, took exception to some of the judge's remarks, because he held that the prosecution was not being fairly treated. The case was a court and not a jury trial and the judge dismissed the case in favor of the quack. This was eleven years ago.

Emboldened by his apparent immunity, Aycock has continued to defraud the tuberculous public all these years, until finally the postal authorities have proceeded against him for fraudulent use of the United States mails. About January 1, 1928, a fraud order was issued against the Aycock Medical Institute, Aycock Medicine Company, Aycock Medical Company and Charles F. Aycock. There is reason to believe, however, from letters that have been received in THE JOURNAL office since the issuance of the fraud order, that Aycock is evading the order by doing business under the name "Tuberclecide Institute," 402 Delta Building, Los Angeles, California.

As it is many years since THE JOURNAL has published the essential facts regarding Aycock and his "cure," a restatement is desirable. The following excerpts from the memo-

randum of the Solicitor of the Post Office Department to the Postmaster-General, recommending the issuance of a fraud order, while detailing certain new facts also bring out most of the facts that were given in THE JOURNAL'S articles (reprinted in the pamphlet "Consumption Cures" and also in "Nostrums and Quackery," Vol. I). To quote from the Solicitor's memorandum:

"The business under consideration is the sale of an alleged treatment for tuberculosis through the mails. This treatment consists of a preparation known as 'Tuberclecide,' put up in a box or glass jar in the form of pearls, or round gelatine capsules. About 100 of these pearls are included in each one-month treatment. A liquid tonic preparation is included with each treatment. This preparation is called 'Metablitone.' The Metablitone is also sold separate and apart from the treatment, the price asked for each bottle containing thirty days' treatment of Metablitone being $2.50. The present price asked for the complete tuberculosis treatment, consisting of Tuberclecide and Metablitone, is $25. Formerly $20 was asked for this treatment. [At the time of THE JOURNAL'S exposure $15 was the price of the fraud.—ED.]

"In order to have a thorough understanding of the enterprise involved here, it is necessary to set forth some facts as disclosed by the evidence respecting Charles F. Aycock's personal history, particularly that portion of his history leading up to and following his alleged 'discovery' or 'invention' of his treatment for tuberculosis.

"According to his testimony at the hearing, Aycock had 'read medicine' with a country or small-town doctor in Indian territory for a short time. Later he had compounded and sold through drug stores an alleged catarrh cure. While holding the office of County Treasurer of Boone County, Arkansas, he was convicted of embezzlement of county funds and sentenced to the Arkansas State Penitentiary at Little Rock for five years. It appears that he bound and gagged himself in an effort to cover this embezzlement. He claims that shortly after being committed to the penitentiary, he was assigned to the penitentiary hospital, where he was employed as assistant to the physician in charge for about eleven or twelve months.

"In his booklet, Aycock refers to his having been the assistant to the physician in charge of the State Hospital at Little Rock. At no point in his literature does he disclose that he was attached to this penitentiary hospital as a prisoner under five years' sentence for embezzlement. He asserts that during this time he contracted pulmonary tuberculosis, had a number of hemorrhages, and was released from the penitentiary owing to his physical condition. The evidence is not clear as to whether he was pardoned or received a commutation of sentence. The evidence indicates that a petition for his release was carried over the county by his then wife, traveling on foot with a young child, and that after his release, he deserted this wife and child, the wife having since remarried. He claims that after his release he 'practiced medicine' in Oklahoma with an elderly doctor, no license to practice being required there at that time.

"He stated that for about two years after his release, he suffered from pulmonary tuberculosis and during this time lived for short periods in Wyoming, Arizona and California, at times working in a restaurant, as a driver of an express wagon, and as a grader of lumber."

The memorandum then goes on to state that Aycock claims to have taken various "patent medicines" for tuberculosis and finally evolved his own "treatment," which he states cured him. To continue:

"From the evidence, it appears that the first trade name, other than this personal name, adopted for the sale of the Tuberclecide treatment was the Tuberclecide Company. This concern was incorporated on October 3, 1910, the incorporators being Charles F. Aycock, Jerome Craite and Frank M. Wolf. The capitalization was $45,000. In October, 1911, Messrs. Craite and Wolf withdrew from the company and Mr. Aycock continued the business until September 17, 1913, at which time he entered into an agreement with Messrs. Dick Ferris and C. R. Harris of Los Angeles, by the terms of which they became managers of the company and each of them was to receive $150 per month for his services. This arrangement continued until January 15, 1914, when Mr. Aycock agreed to dispose of his interest in the company to Messrs. Harris and Ferris for the sum of $100,000, payment to be made in monthly installments consisting of 1/10 of the net profits arising from the operation of the business. The formula was placed in escrow in a bank and was to be delivered to Messrs. Harris and Ferris when $100,000 had been paid over to Aycock. The arrangement provided that Aycock was to furnish Harris and Ferris such quantities of Tuberclecide as their business might require pending final payment. During the time that Messrs. Harris and Ferris conducted the business, Dr. M. S. Iseman, whose endorsement of the Tuberclecide treatment is carried in the Aycock literature, was employed by the promoters in connection with the business.

"The evidence indicates that after $20,000 had been paid under the contract above mentioned, Mr. Aycock terminated his arrangement with Messrs. Harris and Ferris, upon becoming convinced that they were using a 'substitute' for Tuberclecide."

When the Post-Office inspectors first investigated this fraud, they called on Dr. Iseman (who has since died) and learned from him that he was not at that time using Tuberclecide,

LOS ANGELES HERALD: SU

LOCAL ALCHEMIST DISCOVERS CURE FOR TUBERCULOSIS

Germs of Disease Are Destroyed by Specific Worked Out After Profound Study

FREES HUMANITY OF PLAGUE

Millions of Lives Needlessly Sacrificed Each Year—Two Perish Every Minute

"OVER a million persons die each year of tuberculosis. That is at the rate of three thousand a day or two a minute. This awful sacrifice of human life is not necessary. The disease is curable and in less than one generation can be eliminated."

This startling statement was made in all seriousness by a Los Angeles man who claims to have perfected a specific cure for tuberculosis. Charles F. Aycock, formerly of Oklahoma, spent fifteen years studying and experimenting in his laboratory, seeking a remedy for the dread white plague. During that time he was practicing medicine and closely observing numerous cases that came under his care.

"All that time," said Mr. Aycock," who was seen at his office in the International Bank building, "I knew that this affliction, which was the most prevalent of all fatal diseases, would yield to some specific if it only could be discovered. I made exhaustive microscopic tests of tubercle bacilli and other pathogenic germs until I was convinced that if one could discover a specific that would destroy the toxins without impairment of the tissues then tuberculosis would be easy to cure.

SUCCESS CROWNS RESEARCH

"My discovery was not an accident. It was a result slowly worked out to final day, and the perfection came I sought to [illegible] hypodermics [illegible] outcome and al-

and care were given the patients have recovered. Bacteriological tests were taken in all these cases, and I have in my possession monthly statements from an eminent bacteriologist showing how steadily the tubercle bacilli had diminished until they had disappeared.

RESPOND QUICKLY TO TREATMENT

"I am convinced there is no case of consumption I cannot cure, given that the patient has the vitality to survive a few weeks and give my remedy a chance to begin the elimination of the tuberculosis germs."

Asked for a more detailed description of the treatment, Mr. Aycock said there was nothing to say. The fluid is nearly tasteless and is taken at mealtime with the food. It is not noticeable, and there are no evil effects. No claims are made that the remedy is a tonic, yet Mr. Aycock declares that in almost every instance the patient's digestion is improved and upbuilding of the system follows.

According to statements from former sufferers from tuberculosis, Mr. Aycock's remedy generally meets with response within a week or ten days after treatment has been begun. The chemist and his associates declare it depends on the individual. "In instances of extreme prostration the response is quicker than in cases where the sufferer is up and around the house. In cases where the victim is working each day the remedy is slower in effect. This is but natural, as those who are taking perfect rest should improve the more rapidly. In cases where there were plenty of good food, rest and fresh air we have met with quick and satisfactory results. In many instances four or five days after treatment has been begun the patient has had the first real restful sleep for months, if not for years. The cough diminishes. Of course the more that is done for the benefit of the general surroundings the better. There is no objection to any palliatives that may be administered while waiting for my specific to get hold on the real cause of the trouble. These palliatives, however, are usually abandoned in a short time after treatment is begun. They become unnecessary, and there is no inclination to continue them."

DESTROYS THE GERMS

Asked about the extreme cases of tuberculosis of long standing the discoverer instantly disavowed any claims to building up destroyed tissue. He declared that no miracles were wrought. The specific does what he claims for it—it destroys all the tubercle bacilli in the human anatomy and gives the afflicted one an opportunity to make the most of the fact that the germs are gone. "We have one case in [illegible] the widow [illegible] given [illegible]

Reproduction of part of a two-column advertisement of Tuberclecide that was run some years ago. The advertisement was so set as to appear as reading matter.

because he had "invented a treatment of his own, which he considered better!" After Iseman's death, Aycock and another person continued the sale of Tuberclecide under the name "Golden State Medical Company," a name which was later changed to "Aycock Medical Institute," and later still to "Aycock Medical Company." The memorandum continues:

"The evidence in this case shows, and I so find, that the statements to the effect that Aycock took advantage of what the world's most eminent physicians had previously discovered regarding the action of various medicines upon tuberculosis, and successfully eliminated the harmful effects, are false and fraudulent. The evidence before me shows that the ingredients of Aycock's alleged treatment have long been known to the medical profession and have long since been proven as worthless as cures for tuberculosis. The evidence shows that the taking of the Aycock treatment has a deleterious effect upon the stomachs of patients. Interviews had

by one of the inspectors who investigated this case with persons whose testimonials appear in the Aycock booklet and circular matter, and with their relatives, show that the use of the Aycock treatment by these persons, who at one time furnished testimonials to Aycock stating that they had been cured, had to be discontinued on account of its disorganizing effect upon the digestive functions."

The Post-Office inspectors, when investigating the case, naturally looked into some of the testimonials, which are the chief advertising asset of all medical fakers. They found, as might be expected, that some of the patients quoted as having been cured of tuberculosis were not tuberculous at all, while in some cases in which the testimonial givers had actually had tuberculosis, the victims were found to be dead.

After Tuberclecide was analyzed by the chemists of the American Medical Association, Aycock changed the form in which his nostrum was put up. For some time the stuff has been sold in the form of gelatine capsules, or "pearls." The Solicitor's memorandum continues:

"Two chemists, each of whom have had a number of years' experience in analyzing drug products, testified at the hearing on behalf of the Government. Their testimony was to the effect that three analyses of the product, 'Tuberclecide,' had been made, which showed that the preparation consisted of ⅓ guaiacol and ⅔ fatty oil. One of these chemists made a special test for gold but found none. Since the hearing, further tests of the product 'Tuberclecide,' purchased by the inspector in this case through test correspondence, have been made for gold and none found."

The nostrum was tested for gold because of claims made by quack Aycock to the effect that this ingredient was part of the "cure." Gold was not found by the government chemists, but this fact did not bother Aycock. He put on the stand his own "consulting chemist"—Henry C. Fuller of Washington, D. C. This is the same Mr. Fuller who a few years ago published "The Story of Drugs," which so volubly whitewashed the "patent medicine" industry. The Solicitor's memorandum, although not mentioning Fuller by name, states:

"There was produced at the hearing, on behalf of the respondents, a consulting chemist, who testified that he had been handed a glass jar of gelatine pearls labeled 'Tuberclecide' by one of the counsel for the respondents on the evening before his appearance as a witness, and had been directed to test the preparation for gold; that such test had been made and he had found present gold tri-bromide. This test was not made on samples purchased through the mails by the post office inspectors. On cross-examination, Mr. Aycock admitted that there was a difference in the physical appearance of the pearls examined by his chemist and those placed in evidence in connection with the Government's case.

"On cross-examination, Mr. Aycock stated that his 'Metablitone' formula was not a secret. When asked for the ingredients, he stated that he could not name all of them from memory, but that he thought it had twelve ingredients. He stated that it contained cinchona, nux vomica, quasia, bitter orange peel, wild cherry and sumbul. On being prompted, he admitted that it also contained sherry wine, white pine, hardhack and columba. When asked whether it contained snake venom, he indicated that he did not care to state, but later in cross-examination he stated that he puts rattlesnake venom either in his Metablitone or in his Tuberclecide.

"Throughout the hearing he maintained that there had been no variation from his original formulas for his tuberculosis treatment, consisting of Tuberclecide and Metablitone, since he first invented them and cured himself by their use. However, on cross-examination he stated that he thought he added his Metablitone to his treatment before he was cured. The evidence shows that he at one time used 'Aycock's Lung and Kidney Plaster' in connection with his tuberculosis treatment and at other times used cough medicines called 'Cough-No-More' and 'Sulphardine.'

"From his own testimony, it is shown that his Metablitone formula has been materially changed at various times. He claimed to manufacture this at times in the basement of his home and at other times to have various pharmacists put it up, and still other times Parke, Davis and Company put it up. The two samples of the preparation in evidence, as part of the Government's case, showed a difference in color and in the amount of sediment therein. Aycock attempted to explain this by stating that one was filtered more than the other. By his testimony he disclosed that he has no idea what he or the pharmacists or manufacturers filter out in the process of manufacture."

At the hearing Aycock had no physicians testify in his behalf. The government had two physicians testify, both well-qualified and of considerable experience in the treatment of tuberculosis. Aycock filed a number of sworn testimonials of lay users of his treatment but the government, on the basis of long experience, rejected these testimonials, because as scientific evidence, they are worthless. Aycock also attempted to use in his own behalf the decision of the federal judge in the Food and Drugs Act case of eleven years ago. The Solicitor for the Post Office Department, however, pointed out that that decision in no way operated as a license to Aycock to purvey his nostrum, Tuberclecide, until the end of time regardless of the truth or falsity of the claims made for it. Summing up all the evidence, the Solicitor declared that the evidence showed that Aycock and his various named concern were engaged in a scheme for obtaining money through the mails by means of false and fraudulent pretenses and recommended that a fraud order be issued. It was issued.

Correspondence

STRABISMUS IN CONGENITAL SYPHILIS

To the Editor:—In THE JOURNAL, February 4, Dr. Lloyd B. Dickey speaks of strabismus as a symptom of congenital syphilis. References to this are by no means new. Edmond Fournier (Recherche et diagnostic de l'hérédo-syphilis tardive, Paris, Masson & Cie, 1907, p. 74) states that his father, Prof. Alfred Fournier, was the first to call attention to it, after finding it nineteen times in fifty cases of congenital syphilis. Mauriac (Syphilis tertiaire et héréditaire, Paris, J. B. Baillière et fils, 1890, p. 1133) also refers to it as an important sign. Leredde (La syphilis héréditaire et la famille syphilitique, Paris, A. Maloine et fils, 1925, p. 37) places it among the more frequent stigmas of congenital syphilis.

B. BARKER BEESON, M.D., Chicago.

OLIVER WENDELL HOLMES IN HALL OF FAME

To the Editor:—In the January issue of the *North American Review* there is a list of the names admitted to the Hall of Fame, and the names of those who are not yet honored with a bust.

Among the latter is that of Oliver Wendell Holmes.

The American Association for Science is taking care of Agassiz; the Quakers are going to honor Whittier; the telegraphers are remembering Morse, and the Masonic order is looking after Paul Jones.

May I suggest that the medical profession provide a suitable bust in memory of Holmes, than whom there is none more worthy. It can be said of him as Dr. Samuel Johnson said of Oliver Goldsmith, Nihil erat quod non tetigit, nihil quod tetigit non ornavit.

JOHN FERGUSON, M.D., Toronto.

"SPONTANEOUS FRACTURE OF THE POSTERIOR CLINOIDS"

To the Editor:—I have noted with interest the article on "Spontaneous Fracture of the Posterior Clinoids" (THE JOURNAL, February 11, p. 457). The illustration demonstrates the posterior and anterior clinoid processes of the sella turcica accurately, thereby showing excellent x-ray technic; frequently, as the result of poor technic, distortions of the pituitary fossa are observed which on further study prove

to be a normal sella turcica. I have been interested in the study of this region from the roentgenologic point of view for twelve years and have noted many false readings of what appeared to be normal pituitary fossae. The roentgenogram shown in this article impresses me and I feel fairly certain that the distortion of the posterior clinoid process of this patient is a hyperostosis adjoining the posterior clinoid, rather than a fracture as stated. Hyperostosis is not an unusual observation in irritations due to pathologic changes of the region. The posterior clinoid and sella appear intact in the illustration, well outlined and normal in size and shape, but small, as the author emphasizes.

The thinning and expansion of the pituitary fossa is well known from pressure of pituitary tumors and intracranial tension. If one would consider the anatomy and thickness of the region, it seems unlikely that a spontaneous fracture of the sella turcica could occur from a sudden swelling of the pituitary gland. I believe this to be a case of hyperostosis of the posterior clinoid process due to pathologic conditions in the vicinity and not a fracture.

C. W. PERKINS, M.D., New York.

CHATFIELD-GIRDLESTONE SPLINT

To the Editor:—In the ordinary course of events, the columns of THE JOURNAL might not be open to me exactly, but as your pages have unwittingly done me an error, I wish to have the courtesy of a little space for the necessary correction.

Although it was made known to me just about a year ago, while in a hospital in Boston, that I had been some months previously the indirect subject of an article by Dr. Philip Lewin of Chicago, only this morning did I have the opportunity of seeing what the article contained. The reprint comes from THE JOURNAL, Nov. 13, 1926, p. 1644, under the caption "The Girdlestone Splint for Bilateral Deltoid Paralysis."

I devised the splint myself, while at the Wingfield Orthopaedic Hospital, Headington, England, and while under the care of so eminent a British surgeon as Mr. Girdlestone. It was decided to call the apparatus the Chatfield-Girdlestone bilateral deltoid splint, but through some typographic error or misinformation, the article does not bear this title, nor the splint its proper name.

I may add that the first splint of its kind is still in my possession; it is the one pictured in the article.

CHARLES M. CHATFIELD, Reno, Nev.

[The letter of Mr. Chatfield was referred to Dr. Philip Lewin, who writes:]

"When I visited Dr. Girdlestone at Oxford, England, in 1925, he introduced me to Mr. Chatfield, who was a patient in his hospital at the time. He told me that Mr. Chatfield was a Rhodes scholar and was stricken with infantile paralysis. Nothing was said concerning the inventor of the splint, and in the correspondence which passed between Girdlestone and myself no word was mentioned about Mr. Chatfield. I therefore took it for granted that Dr. Girdlestone invented the splint and had it made in his brace shop."

STONE CUTTERS AND GRANITE CUTTERS

To the Editor:—I wish to endorse the communication of Dr. C. E. Perry (THE JOURNAL, Dec. 24, 1927, p. 2211). I think it very unfortunate that the classification "stone cutters" is used. I have lived and worked in the marble district of Vermont for fifteen years and only rarely find tuberculosis in a marble cutter. It is quite as apt to appear in office workers or in the families of the cutters as it is in the cutters themselves. Dr. Perry has already pointed out that granite cutters frequently switch to marble cutting. My belief is that marble dust is not harmful and it is unfortunate that the occupation should be classed with granite cutting, which is quite another story.

EDWARD J. ROGERS, M.D., Pittsford, Vt.
Superintendent and Medical Director,
Vermont Sanatorium for Incipient
Tuberculosis.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CAUSES OF PAIN IN LEFT HYPOCHONDRIUM

To the Editor:—I will appreciate it if you can suggest some diagnosis and treatments for the following case: A man, aged 34, complains of pain over the left side of the abdomen running from the left costal border down to the left pelvic region, apparently over the descending colon. The pain is made worse by working and disappears almost entirely after a rest. Pain also is noticed over the chest, especially over the left side. Physical examination is negative. Roentgen-ray examination of the big colon is negative. The chest is normal. Can it be possible that parasites are responsible for the trouble? The patient is pale.

J. Y. R., M.D., Neb.

ANSWER.—There are many causes for pain in the left hypochondrium as described. Parasites, if present, can be detected in the stool. It is questionable, however, whether they are the cause of pain. Even though roentgen-ray examination may have been with negative results at first, subsequent examination might reveal a carcinoma of the splenic flexure or the descending colon. The stools should also be examined for blood. Other conditions that may cause pain in this region are reflex spasm of the splenic colon from chronic appendicitis or cholecystitis, with or without stones; spastic colitis; lesions of the left kidney, as perinephritis or unilateral interstitial nephritis; perisplenitis, under which condition a large spleen may be found, or adhesions elsewhere between the viscera. Occasionally an incomplete left inguinal hernia or rarely a hernia in Petit's triangle may cause leftsided abdominal pain. Referred pain may arise from pressure or other irritation of the last dorsal or first lumbar nerves. Finally, in view of the pain being relieved by rest, one must think of some referred abdominal pain from a cardiac lesion.

DISEASES OF THE ARCTIC REGION

To the Editor:—I have a friend and patient who is soon to depart on an arctic expedition. He asked me to prepare a medical and surgical outfit for him to take along. It is not contemplated to take a physician with him. Will you kindly advise me to what diseases they will be prone? Are there any statistics as to accidents and diseases on previous arctic expeditions? Do you think they will be taking undue risk going without a physician? There will be eight in the crew and three more in the party. One of them is thoroughly familiar with first-aid work. Any literature that you can tell me about, and any advice you can give me will be greatly appreciated.

WALTER F. STILLGER, M.D., Hicksville, N. Y.

ANSWER.—There are practically no diseases met in the arctic which are unusual. Scurvy will not appear during the course of one season. Nevertheless, MacMillan sees that his companions eat a few ounces of raw meat each week—caribou, seal or walrus—and meat raw or not overcooked is the remedy. Otherwise one must be prepared to meet illness as elsewhere. Digestive disturbances are not common, but laxatives and some opium preparation for diarrhea are in demand at times. Salicylate is useful after strains, exposure and chilling, which may result in neuritis or rheumatism.

There is a moderate demand for minor surgery. In the expedition itself the usual cuts, bruises, sprains and possible gunshot wounds will require attention. Sore feet and hands are common. Mosquitoes are indescribably bad and adequate veils are of great value. Smoked or colored glasses fitting closely to the eyes—preferably in two grades of density—are a necessity, as well as eye-drops for snow blindness. These may be any preparation recommended by an ophthalmologist.

As to risk, one must take the chance he would elsewhere deprived of medical aid. MacMillan has recently wintered twice without a physician. One would frequently have been desirable, but was not necessary. In his four year trip he

took a physician. Last year on his expedition he had a physician who did an emergency appendectomy and delivered a renal calculus. It is of primary importance to have some one who can at least use a scalpel fearlessly and use surgical sutures, for the most frequent condition found is a low grade phlegmonous, partially anaerobic infection of the fingers and hands often extending up the arms, coming from scratches from walrus, fish and seal, especially the latter. These require free drainage.

Furthermore, demands for aid come mostly from natives and not from members of the expedition. The natives have frequently been years without medical attention, and it devolves on such expeditions to give aid. Infections, old unset fractures, gunshot wounds and tooth extractions are the most common. Plaster of paris is best taken in bulk, and bandages made with gauze as required.

Statistics are all favorable for a short trip—six months or less—with the reservation that any emergency may arise.

MacMillan has made seven trips north, one for four years, two for fifteen months, and four returning in the fall without the loss of or serious injury to a man—broken ribs and sprains not counting. Peary lost two men—one lost altogether and one drowned (perhaps killed by Eskimos), but always had a physician, notably Dr. Cook.

Careful examination of the medical records of all arctic expeditions does not indicate any unusual hazard at sea or ashore. Much depends on leadership and good sense, and on the personnel of the expedition. If these are sound, there should be no undue hazard.

The following references are of expeditions in which a medical record was kept. This is usually distributed throughout the book as part of the narrative and there is no literature dealing solely with this aspect.

Goodsire, Robert: A Surgeon's Journal in Search of Franklin.
Greeley, A. W.: Three Years of Arctic Service.
MacMillan: Four Years in the White North, Etah and Beyond.
Armstrong, Alexander: Narrative of the Northwest Passage.
Nares, G. S.: Voyage to the Polar Sea.
Hall, C. F.: North Polar Expedition, U. S. S. Polaris.
Nansen: Farthest North.

PANCREPATINE

To the Editor:—Will you kindly inform me as to the value of Pancrepatine in the treatment of diabetes? There are several other preparations whose manufacturers make the same claims.

J. T. LELAND, M.D., Herman, Minn.

ANSWER.—The Anglo-French Drug Company, which markets "Pancrepatine A. F. D.," has not requested an examination of the preparation by the Council on Pharmacy and Chemistry. Information in regard to it other than that which is contained in the advertising does not appear to be available. "Pancrepatine A. F. D." is stated to be "a combination of a Special Extract of the Pancreas and Hepatic Extract. . . ." It is claimed that the oral administration of the preparation results in "Reduction of Glycemia" and "reduction and sometimes total disappearance of glycosuria."

In commenting editorially on the administration of insulin, THE JOURNAL as long ago as 1923 called attention to the desirability of giving wide publicity to the current limitations of this most promising therapy, since many "just-as-good" pancreatic and antidiabetic preparations for oral use were already being put on the market. This warning is still in order, for there is yet no convincing evidence to show that any preparation taken by mouth is an effective means of producing the characteristic action of insulin.

SMALLPOX IN AUSTRALIA

To the Editor:—Does smallpox exist in Australia? If so, what has been the history of it there? (That is, about how many cases and what measures have they used to combat smallpox?)

LOUIS L. WEINBERG, Ventnor City, N. J.

ANSWER.—Since the settlement of Australia, in 1788, smallpox has been brought to the shores of that continent on numerous occasions—182 from 1850 to 1908 and sixty-one from 1909 to 1923. The close lookout kept against this disease at quarantine prevented its spread except on relatively few occasions—a score or more from 1850 to 1908 and four times from 1909 to 1923. In the nine important epidemics during the first period there were 486 cases and 106 deaths. There was only one important epidemic during the second period, that in New South Wales with 2,400 cases and four deaths. The widespread and prolonged duration of this epidemic were due to the mildness of the type of the disease, which hindered rapid diagnosis and isolation, and detracted from the advice given in favor of vaccination and the public demand for it.

The chief defense against smallpox, the carrying out of required vaccination, has varied in different parts of Australia and from time to time in the same part, but in general Australia is to be regarded as unprotected, since the only requirement carried out in any of the states has been that of vaccinating infants. The other defenses have been: distance from foreign infected localities, quarantine inspection, distance between settlements in the continent itself (the density of population in Australia is 2 per square mile, as against 35 in the United States and 700 in England), rapid diagnosis and isolation of such cases as occurred, and the vaccination of contacts. The disease has prevailed chiefly in those districts where vaccination is not required.

Two publications issued by the Australian government are of interest: "The History of Smallpox in Australia, 1788-1908," by J. H. L. Cumpston, and "The History of Smallpox in Australia, 1909-1923," by J. H. L. Cumpston and F. McCallum. Both publications were printed by the government printer, Melbourne.

INCOMPLETE MASCULINE DEVELOPMENT

To the Editor:—A boy, aged 10 years, who is 3 inches over the normal height and who weighs 120 pounds (54 Kg.), has a fat, large head, fine soft hair, a fine delicate skin, narrow shoulders, broad hips and graceful tapering limbs. The hands are of average size, the feet are large, the testes are undescended and the penis is infantile. He plays normal boy's games and is a good boxer, but rather likes to help with housework. He runs to the overgrown feminine type, and is not eunuchoid. He has had thyroid and pituitary feeding. There are no results on sexual development. What can be done to develop masculine characteristics?

M.D., New York.

ANSWER.—The bodily configuration described suggests the condition that is spoken of as an endocrine disorder concerning which little is definitely known. The administration of endocrine preparations has, as a rule, little effect and there is no particular remedy that can be advised. It is assumed that examinations have been made to exclude gross lesions in the pituitary region—roentgen-ray studies, perimetric measurements, and disturbances in sugar tolerance. The principal indications are the training of the boy to healthy activities and the avoidance of teaching him to regard himself as inferior or incompetent. He is still young and there may be only a retardation of development; but should he never acquire masculine characteristics he can still achieve a useful and happy life.

PARATHYROID HORMONE IN GLANDULAR INSUFFICIENCY

To the Editor:—Please advise me as to the prolonged use of parathyroid hormone (Lilly's parathyroid serum) in parathyroid insufficiency? Are there any bad effects? Can the dose be lessened or does it need to be increased? Please omit my name and address.

M.D., Kansas.

ANSWER.—The status of parathyroid hormone in the treatment of such conditions as postoperative tetany, spasmophilia, sprue, nephritis, whooping cough and lead poisoning is as yet unsettled, partly because the preparation of a stable, physiologically standardized extract containing the active principle of the parathyroid gland is a matter of recent date. The principal physiologic action of this hormone seems to be definitely related to calcium and phosphorus metabolism. It has been repeatedly observed as a powerful mobilizer of the body calcium in animal experiments.

The dose of this hormone and the duration of its administration are dependent on the type of insufficiency existing. In postoperative tetany a daily constant dose, somewhere around 18 units of parathyroid extract-Collip, is given over a few days until the symptoms subside. In spasmophilia it is given over longer periods in smaller doses. Overdosage effects, which may result in death, have been produced consistently in both normal and parathyroidectomized dogs. When successive doses of hormone are given to animals, there results a very viscous blood with a decreased volume. O. H. Petty did not find serious symptoms of poisoning even with a marked elevation of blood calcium. As to the effect of the hormone on the heart and circulation, slowing of the heart rate with marked arrhythmias, premature beats, and low blood pressure have been noticed. Nausea, vomiting and excess salivation have been induced.

In the light of our present knowledge, it can only be suggested that prolonged use of parathyroid hormone may give rise to harmful results. A reduction in the amount administered would be more logical than an increase, especially when given over a long period.

TREATMENT WITH ROENTGEN RAY AFTER OPERATION FOR OVARIAN PAPILLOMA

To the Editor:—A physician's wife, aged 38, was operated on, March 19, 1927 (double oophorectomy), for bilateral papilloma of the ovaries. Both ovaries were believed by the surgeon to have been removed intact, and the patient to date is clinically free of symptoms indicating any recurrence (vaginal examination negative). Deep roentgen-ray therapy (200 minutes) at twenty to thirty minute intervals was given in May and September to destroy any possible floating cell and to guard against recurrence. At the time of operation the uterus and pelvic viscera were apparently normal and uninvolved, although the right ovarian stroma had been broken by the extruding cauliflower growth. The patient feels well and has gained weight, and what I want to know is whether you think her danger period is over, or is it best for her to take more deep therapy? I might add that the deep therapy causes her great nausea, which persists for a week after and that she wants no more, unless it is necessary or at least advisable. Please omit name.

M.D., Washington.

ANSWER.—Experience indicates that roentgen-ray therapy following operations for ovarian papillomas gives good definite results even in instances of incomplete removal. If a few periods of irradiation do not furnish a satisfactory result, continuation of the radiotherapy is probably useless. Deep roentgen-ray therapy always involves a certain amount of danger to the general constitution, and in susceptible persons may even produce a condition of general debility known as roentgen-ray cachexia. In the instance quoted there seems to be no indication for a repetition of the roentgen-ray treatments.

INSTRUMENT FOR RECTAL PROSTATIC MASSAGE

To the Editor:—What is the instrument referred to for performing massage "to insure proper evacuation of the seminal vesicles," on page 2212 in the Dec. 24, 1927, issue of THE JOURNAL?

COLLINS H. JOHNSTON, M.D., Grand Rapids, Mich.

ANSWER.—The instrument referred to is a club-shaped contrivance, which may be secured at any medical instrument house. It is known as the instrument for rectal prostatic massage. The clubshaped end of the instrument well lubricated is introduced into the rectum and by moving it up and down and exerting pressure on the handle, the prostate and seminal vesicles are emptied of their contents. It is important to lubricate, previous to the introduction of the instrument, the entire anal region in order to prevent inversion of hair or cuticle into the rectum.

INSTRUMENTAL OR MANUAL PROSTATE MASSAGE

To the Editor:—In Queries and Minor Notes (THE JOURNAL, Dec. 24, 1927, p. 2212, and other issues), in answer to a question concerning the treatment of gonorrhea, you advise prostatic massage with a massage instrument. Your exact statement is, "Rectal massage should always be performed with a massage instrument to insure proper evacuation of the seminal vesicles."

I wish to register a protest against such general advice, taken as authoritative, no doubt, by many medical men lacking experience in the procedure. Prostatic massage, despite its universality as a therapeutic measure, is not entirely devoid of danger, as has been pointed out by Farman (THE JOURNAL, Oct. 14, 1922, p. 1328). He says: "Instrumental massage of the prostate and seminal vesicles is not widely favored. The more inaccessible parts of these structures may be reached with a metal or hard rubber masseur, the use of which is, however, open to the objection that the manipulation and pressure are not guided by the sense of touch." In discussing this article Dr. Bransford Lewis makes the statement: "There is no place for instrumental massage." Abraham Wolbarst (Gonococcal Infection in the Male, St. Louis, C. V. Mosby Company, 1927, p. 173) urges digital massage with the greatest care, avoiding massage in a mechanical form. Other books on the subject, including Keyes, under the technic of massage, make no mention of instrumental massage.

Prostatic massage is an art, and any medical man having experience in the instruction of students in this procedure will realize that proficiency is gained only by oft repeated practice. In prostatic massage the size, shape, contour and consistency of the gland and the vesicles are the determining factors in judging the amount of pressure and the points at which to apply this pressure. I cannot conceive of this being accomplished with a metal instrument. Rough massage may cause hemorrhage, syncope and epididymitis even if done digitally, and instrumental massage certainly has a greater tendency.

In fully 90 per cent of the cases relaxation can be gained by proper technic in the massage, and the vesicles reached as well as the prostate; if this cannot be accomplished, the method of Pomeroy (THE JOURNAL, June 19, 1927, p. 1897) may be utilized.

After a more or less lengthy and abundant experience in a fairly large clinic, I am firmly convinced that digital massage of the prostate is the only safe and thorough method and that instrumental massage is absolutely contraindicated as a routine method.

CHARLES H. GARVIN, M.D., Cleveland.
Assistant Surgeon to the Dispensary, Genito-Urinary Surgery, Outpatient Service of Western Reserve University School of Medicine and of Lakeside Hospital.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.

COLORADO: Denver, April 3. Sec., Dr. Philip Work, 324 Metropolitan Bldg., Denver.

CONNECTICUT: Hartford, March 13-14. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Bd., New Haven, March 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, April 10. Sec., Dr. Edgar P. Copeland, Suite 110, 1801 Eye St., Washington.

HAWAII: Honolulu, April 9-12. Sec., Dr. James A. Morgan, Room 48 Young Bldg., Honolulu.

IDAHO: Boise, April 3. Commissioner of Law Enforcement, Hon. F. E. Lukens, Boise.

ILLINOIS: Chicago, April 10-12. Supt. of Reg., Mr. V. C. Michels, Springfield.

LOUISIANA: New Orleans, May 1. Sec., Homeo. Bd., Dr. F. H. Hardenstein, 830 Canal St., New Orleans.

MAINE: Portland, March 13-14. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, March 13-15. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

MINNESOTA: Minneapolis, April 17-19. Sec., Reg. Bd., Dr. A. E. Comstock, 524 Lowry Bldg., St. Paul. Basic Science examinations, April 3. Sec., Basic Science Bd., Dr. E. T. Bell, U. of Minnesota, Minneapolis.

MONTANA: Helena, April 3-5. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEW HAMPSHIRE: Concord, March 8. Sec., Dr. Charles Duncan, Concord.

NEW MEXICO: Santa Fe, April 9-10. Sec., Dr. Wm. T. Joyner, Roswell.

OKLAHOMA: Oklahoma City, March 13-14. Sec. Dr. J. M. Byrum, Shawnee.

PORTO RICO: San Juan, March 6. Sec., Dr. Diego A. Biascoechea, 3 Allen St., San Juan.

RHODE ISLAND: Providence, April 5-6. Sec., Dr. B. U. Richards, State House, Providence.

WISCONSIN: Madison, March 17. Sec., Basic Science Bd., Prof. M. F. Guyer, U. of Wisconsin.

Michigan October Examination

Dr. Guy L. Connor, secretary of the Michigan Board of Registration in Medicine, reports the written examination held at Lansing, Oct. 11-13, 1927. The examination covered 14 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 19 candidates examined, 18 passed and 1 failed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
Howard University School of Medicine	(1927)	81.8
Loyola University School of Medicine	(1927)	78.8*
Northwestern University Medical School	(1927)	84.8
Rush Medical College	(1927)	83.6,* 85.5*
University of Buffalo School of Medicine	(1925)	84.5
Meharry Medical College	(1927)	79.9
University of Alberta Faculty of Medicine	(1925)	81.9
University of Toronto Faculty of Med.	(1922) 77, 90.2; (1926) 84.3, 85.5; (1927) 84.2, 84.3, 86, 87.5	(1925) 83;
University of Western Ontario Medical School	(1927)	84.9

FAILED		
College	Year Grad.	Per Cent
Meharry Medical College	(1926)	71.2

* This candidate will receive his M.D. degree on the completion of one year's internship in a hospital.

South Dakota July Examination

Dr. H. R. Kenaston, director of the Division of Medical Licensure South Dakota Board of Medical Examiners, reports the oral, written and practical examination held at Huron, July 19-20, 1927. The examination covered 15 subjects and included 100 questions. An average of 75 per cent was required to pass. Eight candidates were examined, all of whom passed. Five candidates were licensed by reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
Rush Medical College	(1901)	91.3
University of Illinois College of Medicine	(1926)	90.3, 92.1
State University of Iowa College of Medicine	(1910)	90.5
St. Louis University School of Medicine	(1924)	91.3
Washington University School of Medicine	(1926)	91.7
Creighton University School of Medicine	(1908)	86.7
Omaha Medical College	(1900)	88.7

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
Northwestern University Medical School	(1927)	Minnesota
State Univ. of Iowa College of Homeopathic Med.	(1901)	N. Dakota
University of Minnesota Medical School	(1926, 2), (1927)	Minnesota

Book Notices

AMERICAN MEDICINE AND THE PEOPLE'S HEALTH. An Outline with Statistical Data on the Organization of Medicine in the United States, with Special Reference to the Adjustment of Medical Service to Social and Economic Change. By Harry H. Moore, Public Health Economist, United States Public Health Service. With an introduction by the Committee of Five of the Washington Conference of the Economic Factors Affecting the Organization of Medicine. Cloth. Price, $5. Pp. 647, with illustrations. New York: D. Appleton & Company, 1927.

The topic that most concerns economists, sociologists and physicians today is the increasing cost of medical service and the inadequacy of its provision to men in general. In this volume Mr. Harry H. Moore, himself a public health economist, claims to have set forth without bias or prejudice in organized, logical form the chief facts now available in the present rapidly changing situation. He disavows any intention at propaganda for compulsory health insurance or any particular system of state medicine. Nevertheless, the book seems to constitute a startling arraignment of the practice of medicine as carried on in the United States today.

The vitality and magnitude of this problem may perhaps best be comprehended when it is realized that there are more than 1,000,000 people engaged in medical practice in the United States, of whom less than 150,000 are physicians. The remainder are not all quacks nor are they practicing medicine as such, although many of them do infringe frequently on the borders of medical practice. The list includes technical assistants to doctors, drug dealers, dentists and their assistants, all sorts of nurses and midwives, hospital and clinic superintendents and attendants, and the personnel of health departments. There are approximately 2,000,000 persons in the United States constantly disabled on account of illness, and of these about 600,000 are in hospitals. It is important at this point to call attention to the innumerable "approximates" and "abouts" that are presented in these figures. It is realized, as Mr. Moore emphasizes, that the factor of greatest importance at present is to secure actual knowledge of the conditions as they are.

A critical reader of Mr. Moore's views may be impressed with the fact that he is already committed to certain solutions of the problems of medical practice. Certainly, he believes that medical practice is not now "organized" to serve the public efficiently, and that the majority of physicians are not practicing scientific medicine. He is definitely inclined to the view that the individualistic system of the practice of medicine must give way to some highly organized system. He is committed to the view that government organization of medicine is the solution of the problem. He may disavow this as he does in his introduction, but he cannot discount the manner of presentation of his material, which leads inevitably to that conclusion. The vast majority of physicians, and indeed Mr. Moore also, recognize the importance of maintaining a personal relationship between physician and patient. Physicians who have studied the economic situation of the general practitioner are convinced that the general practitioner, if he is to survive, must become a practitioner of preventive medicine. On the other hand, as an individual he can hardly compete in the practice of preventive medicine with free services given by the state and by philanthropies.

One solution that has been suggested is the provision of more and greater endowments for the organization of special institutions to serve various portions of the community. Today the word "free" is the most overworked word in the American language. "Free air," "free water," "free parking space" and "free crank case service" are perhaps the most widely advertised items. Mr. Ralph L. Harding, editor of the *Guide Post*, has said that the sign "Eyes Examined Free" has probably ruined more eyes that heeded it than ever were benefited. The sign "Consultation Free" has led many of the unsuspecting public into the hands of incompetent quacks. Free service is never as competent as qualified service for which a person pays. Mr. Moore insists that the duties of the state in medicine have already gone far beyond preventive medicine, that medicine is a proper field for state control, and that there are practially no limitations to what the state may do in the field of medicine on demand.

Approximately one half of the book is devoted to appendixes containing information of the greatest importance on the cost of disease, health insurance, governmental activities, pay and part-pay clinical service, fee-splitting and many other subjects. Even the selection of these items has been apparently planned with a view to casting great discredit on the practice of medicine as it exists today. The author seems to have selected his material largely with a view to revolution rather than controlled evolution of medical progress. The last appendix, entitled "Is Medicine Scientific?" is an article by one T. Swan Harding, who, like Mr. Moore, is not a physician. This article, published first in a periodical called *American Medicine*, is an unbalanced, irrational assault on modern medical practice that should never have been published anywhere. Its inclusion in this book is perhaps another indictment of Mr. Moore's judgment.

The economist who is responsible for the volume is acting as director of a group of economists, sociologists, physicians and others interested in health problems, which is planning a five year study of the entire problem of medical service. Possibly Mr. Moore is not committed to a definite program for the evolution of medical practice. Certainly, as the director of a survey, he should not be.

GRUNDRISS DER KLINISCHEN THERAPIE INNERER KRANKHEITEN. Von Prof. Dr. Georg Klemperer, Direktor der IV. medizinischen Universitätsklinik, in Berlin. Third edition. Paper. Price, 6 marks. Pp. 308. Berlin: Urban & Schwarzenberg, 1927.

This practical exposition of treatment of the more important medical diseases is intended to serve as a companion book to the author's "Clinical Diagnosis." A course on therapeutics similar to the one sketched here would be most desirable for senior medical students in this country, most of whom, in deference to present tendencies in medical education, suffer from being inadequately prepared for the treatment of their patients.

SURGICAL DISEASES OF THE GALL-BLADDER, LIVER AND PANCREAS AND THEIR TREATMENT. By Moses Behrend, A.M., M.D., F.A.C.S., Attending Surgeon to the Jewish and Mount Sinai and Northern Liberties Hospitals. Cloth. Price, $4 net. Pp. 278, with illustrations. Philadelphia: F. A. Davis Company, 1927.

Experimental physiology has done more in the last five years to advance the surgical frontier than any other one factor. The newer concepts of gallbladder physiology take equal rank with the discovery of the value of iodine in the preoperative treatment of exophthalmic goiter. It is altogether fitting, therefore, to remark that today's monograph on the bile tracts should contain much that would not be found in one written ten years ago; in particular, one would look for a detailed discussion of the relationship between the early clinical phenomena and what is now known of gallbladder function. Concepts of pathologic conditions of the gallbladder have undergone relatively little change, with the exception, perhaps, that in the early stages of inflammatory disease there may be no gross manifestations. The anatomy of the bile tracts with the common anomalous relationships of ducts and vessels has for many years been well known and frequently discussed. The present volume is more than anything else an anatomic presentation. Approximately the first half is taken up with illustrations of the embryology and the normal and aberrant anatomy of the bile tracts. There is a chapter on the physiology of the liver and pancreas and one on the pathology of the gallbladder, liver and pancreas. Chapters on diagnosis and treatment of cholecystitis, and on anesthesia, cholemia, the liver and the pancreas follow. The chapter on symptomatology is inadequate and not altogether logical. The author at once launches into a discussion of stone, colic and chronic jaundice. He mentions dyspepsia but fails to evaluate it by discussing the early diagnosis of cholecystic disease, which should naturally precede the discussion of advanced pathologic changes. An abdominal differential diagnosis is given which aims at differentiating colic from other acute abdominal crises. The technic of cholecystography is briefly detailed. Its value and bearing in the various stages of the disease, as well as the mechanism of the technic, are not discussed. There is a satisfactory

chapter on operative technic, but the illustrations in this chapter are poor. The chief criticism of this monograph is that it is not abreast of much of the excellent contemporary literature on the surgery of the bile tracts.

A HANDBOOK OF OPHTHALMOLOGY. By Humphrey Neame, F.R.C.S., Ophthalmic Surgeon, University College Hospital, and F. A. Williamson-Noble, F.R.C.S., Assistant Ophthalmic Surgeon, St. Mary's Hospital. Cloth. Price, $4. Pp. 312, with 194 illustrations. New York: William Wood & Company, 1927.

Here is another treatise on ophthalmology for the undergraduate student and general practitioner, following mainly the form employed in Fuchs-Duane. First comes examination of the eye and then refraction, followed by chapters on diseases of the various parts, a chapter on operations, a short consideration of ophthalmic signs in general medicine, eleven pages on therapeutics, and several appendixes. Among the chapters that deserve more or less honorable mention are those on the cornea, the retina, the optic nerve and extraocular muscles, the last presented in a somewhat unusual form, but particularly intelligible. Glaucoma is not sufficiently emphasized to drive home its dangers and frequency, although there is an excellent table of differential diagnosis between that and iritis. Since the book is intended for the student and the general practitioner, the lack of detail of removal of simple foreign bodies is a serious error, as is the wealth of detail describing the removal of cataract. Among etiologic factors of ocular disease, focal infection is properly emphasized; but, in ludicrous contrast, "rheumatism" is still included among the factors. The use of the term "K. P.," parenthetically apologized for as "keratic precipitates," instead of the proper nomenclature of "posterior precipitates" is all too frequent. There are some views expressed in regard to dacryostenosis in children and in adults that cannot be subscribed to. Why are styes still supposed to be due to "general debility, constipation and errors of refraction" instead of recognized frankly as the infectious processes that they really are? On the whole, the book is good; the printing is good, although the binding is not; and the illustrations of external eye diseases are excellent.

FISIOLOGÍA, FISIOPATOLOGÍA Y CLÍNICA DE LAS GLÁNDULAS DE SECRECIÓN INTERNA. (Traducido del catalán.) Por Leandro Cervera. Paper. Price, 4 Ptas. Pp. 162. Barcelona: Arnau de Vilanova, 1927.

This is the first of a series of monographs. The physiology, physiologic pathology and clinical entities associated with each organ of internal secretion are stated. The book is filled with the names of those who contributed in placing our knowledge of the endocrine glands on a scientific basis.

ACTINOTHERAPY FOR GENERAL PRACTITIONERS. By H. G. Falkner, L.R.C.S.I., L.R.C.P.I., L.M., Actino-Therapeutist to the London Teachers' Association. Cloth. Price, $3. Pp. 152, with 36 illustrations. New York: William Wood & Company, 1927.

The present widespread interest in phototherapy finds its response in numerous volumes on this subject. Unfortunately, Falkner's volume, written, as he states in his preface, at the request of many friends, adds neither to the broad presentation of the subject nor to the careful working out of some of its doubtful phases, containing much jumbled information. There is the usual lengthy description of all kinds of proprietary lamps, instead of a clear-cut presentation of principles and types of ultraviolet ray generators. Radiant heat apparatus is mixed in with tungsten and mercury vapor lamps. It is misleading information to state that "hyperpiesis cases which resist all ordinary medicinal treatment invariably respond to ultraviolet ray," or that dysmenorrhea "can be greatly benefited, if not cured, by ultraviolet radiation," adding that, if diathermy is given, the positive pole should be attached to an electrode consisting of a metal plate under which towels soaked in saline solution are placed so as to insure a deep effect, while the negative electrode is to be attached to a Schittenhelm couch. One of the fundamentals of the high frequency current is that there is no negative and positive pole. The enumeration of conditions in which actinotherapy is indicated seems much too far-fetched. One statement in the volume, however, deserves hearty endorsement: that is, that "no treatment should be given in the home with any make of lamp unless under expert medical supervision and with a skilled attendant present."

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

BEDSIDE DIAGNOSIS. By American Authors. Edited by George Blumer, M.D., David P. Smith Clinical Professor of Medicine, Yale University School of Medicine. Three Volumes and General Index. Cloth. Price, $30 per set. Pp. 2820, with 890 illustrations. Philadelphia: W. B. Saunders Company, 1928.

Another American contribution of great scope and power to systematic literature.

NEOPLASTIC DISEASES. A Treatise on Tumors. By James Ewing, A.M., M.D., Sc.D., Professor of Pathology at Cornell University Medical College, New York City. Third edition. Cloth. Price, $14 net. Pp. 1127, with 546 illustrations. Philadelphia: W. B. Saunders Company, 1928.

New edition of one of the best available reference books on tumors.

AN INTRODUCTION TO MEDICAL PROTOZOOLOGY WITH CHAPTERS ON THE SPIROCHÆTES AND ON LABORATORY METHODS. By Robert Knowles, B.A., M.R.C.S., L.R.C.P., Lt.-Col. Indian Medical Service. Cloth. Price, Rs. 25/-. Pp. 887, with illustrations. Calcutta: Thacker, Spink & Company, 1928.

Lectures on the study of the larger parasites that afflict mankind.

PERCIVAL'S MEDICAL ETHICS. Edited by Chauncey D. Leake, Associate Professor of Pharmacology, University of Wisconsin. Cloth. Price, $3. Pp. 291, with illustrations. Baltimore: Williams & Wilkins Company, 1927.

The story of the code which gave the basis for the American Medical Association "Principles of Medical Ethics."

AN APPROACH TO THE PSYCHOLOGY OF RELIGION. By J. Cyril Flower, M.A., Ph.D., Upton Lecturer in Psychology of Religion, Manchester College, Oxford. Cloth. Price, $3.50. Pp. 248. New York: Harcourt, Brace & Company, Inc., 1927.

Excellent essays with special reference to evangelism, George Fox and similar subjects.

A STUDY OF ORTHOGLYCAEMIC GLYCOSURIA WITH PARTICULAR REFERENCE TO ITS HEREDITABILITY. By Urban Hjärne. Translated by Carl Westman. Paper. Pp. 149, with illustrations. Stockholm: P. A. Norstedt & Söner, 1927.

Monograph on sugar in the blood and urine and its significance.

TROUBLES WE DON'T TALK ABOUT. By J. F. Montague, M.D., F.A.C.S. Cloth. Price, $2. Pp. 248, with 12 illustrations. Philadelphia: J. B. Lippincott Company, 1927.

What the layman ought to know about hemorrhoids.

MENTAL HEALTH OF THE CHILD. By Douglas Armour Thom, M.D. Harvard Health Talks, 16. Cloth. Price, $1. Pp. 46. Cambridge: Harvard University Press, 1928.

A good essay reprinted in convenient form.

SINGING SANDS. By Jesse V. Gilbert, M.D. Cloth. Price, $2 net. Pp. 146, with illustrations. Boston: Christopher Publishing House, 1928.

A Southwestern physician in a cowboy hat bursts into rhyme.

MR. FORTUNE, PLEASE. By H. C. Bailey. Cloth. Price, $2. Pp. 238. New York: E. P. Dutton & Company, 1928.

More adventures of the best current medical detective.

HANDBUCH DER PATHOGENEN MIKROORGANISMEN. Herausgegeben von W. Kolle, R. Kraus, und P. Uhlenhuth. Lieferung 13. Band VII. Allgemeines über Spirochäten. Von Prof. Dr. G. Sobernheim, und Dr. W. Lowenthal. Syphilisspirochäte. Von Prof. Dr. G. Sobernheim. Immunität bei Syphilis. Von Prof. Dr. C. Bruck. Die experimentellen Grundlagen der Lehre von der Syphilisimmunität. Von Dr. R. Prigge. Serumdiagnose der Syphilis. Von Prof. Dr. K. Laubenheimer. Frambösie. Von Dr. G. Baermann. Third edition. Paper. Price, 34 marks. Pp. 382, with 32 illustrations. Jena: Gustav Fischer, 1927.

HANDBUCH DER NORMALEN UND PATHOLOGISCHEN PHYSIOLOGIE MIT BERÜCKSICHTIGUNG DER EXPERIMENTELLEN PHARMAKOLOGIE. Herausgegeben von A. Bethe, G. v. Bergmann, G. Embden, und A. Ellinger. Band IV. 2 Hälfte. Fortpflanzung, Entwicklung und Wachstum. Teil 2. Metaplasie und Geschwulstbildung. Von B. Fischer-Wasels, und E. Küster. Paper. Price, 51 marks. Pp. 1195-1811, with 44 illustrations. Berlin: Julius Springer, 1927.

MOSQUITO SURVEYS. A Handbook for Anti-Malarial and Anti-Mosquito Field Workers. By Malcolm E. MacGregor, Entomologist, Wellcome Field Laboratory, Wisley, Surrey, England. Cloth. Price, $5.50. Pp. 282, with 59 illustrations. New York: William Wood & Company, 1928.

THE ART OF ANÆSTHESIA. By Paluel J. Flagg, M.D., Anæsthetist to St. Vincent's Hospital, Fifth Avenue, and Flower Hospitals, New York City. Fourth edition. Cloth. Price, $5. Pp. 384, with 135 illustrations. Philadelphia: J. B. Lippincott Company, 1928.

UEBER DIE KATALYTISCHEN WIRKUNGEN DER LEBENDIGEN SUBSTANZ. Arbeiten aus dem Kaiser Wilhelm-Institut für Biologie, Berlin-Dahlem. Von Otto Warburg. Paper. Price, 36 marks. Pp. 528, with 83 illustrations. Berlin: Julius Springer, 1928.

Medicolegal

Justified Refusal to Have Part of Finger Amputated

(Everitt v. Haldeman-Julius Pub. Co. (Kan.), 257 Pac. R. 939)

The Supreme Court of Kansas, in affirming a judgment which approved an award made by an arbitrator under the workmen's compensation law, says that the plaintiff while in the employ of the defendant sustained an accidental injury by which he lost a part of one of his fingers. The arbitrator found that the defendant offered the plaintiff an operation for the removal of the second joint of the injured finger, the defendant to pay all necessary expenses in connection with the operation, but that the plaintiff refused to submit to such operation. The arbitrator found further that the operation would be a minor one, with very slight danger to the life or health of the plaintiff, and was a proper operation, but that the plaintiff's refusal to submit to it was not unreasonable because it would dispossess him of a member of his body and all benefit that he derived therefrom, and because the operation would not restore him to his former condition. The finding of the arbitrator concerning the reasonableness of the refusal of the plaintiff to submit to the operation was fully sustained by the evidence.

Under the workmen's compensation law, the supreme court cannot say that it is unreasonable for an employee who by accident has had part of one of his fingers torn off to refuse to submit to an operation for the removal of more of his finger, although the operation would probably result in overcoming part of the disability caused by the injury to the finger. Whether the refusal to submit to an operation is unreasonable or not is a question of fact to be determined by the trier of facts.

An award of $2,610 under the workmen's compensation law, as compensation to an injured employee for the loss of a part of a finger, is not excessive when, as a consequence of the injury, an attempt to use his hand causes pain in his hand and arm.

Cerebral Hemorrhage of Workman with Arteriosclerosis

(Texas Employers' Ins. Ass'n v. McGrady et al. (Texas), 296 S. W. R. 920)

The Court of Civil Appeals of Texas says that the question was presented in this case as to whether a hemorrhage of the brain suffered by a workman was an accidental injury if caused alone by heavy manual labor. It has been held that the rupture of a blood vessel caused by an act of violent physical exertion is an accidental injury within the meaning of the workmen's compensation act. If the rupture, commonly called a "hemorrhage," results solely from hardened arteries or high blood pressure or any physical ailment, it cannot be classed as an accident but is a disease. However, the mere fact that the person in whom the rupture occurred has at the time diseased arteries or high blood pressure is not conclusive proof that the injury is a result of a disease and not accidental. The weakened state of the arteries caused by the physical disorder, or the abnormal strain caused by the high blood pressure, is merely a condition on which some exciting or producing cause may operate. If a rupture results from lifting a heavy weight by a healthy person, it is because the exertion is too great for one in that physical condition. The legal principle is the same if the rupture results from lifting a lighter weight by a person of less strength, whether the reduced strength is the result of natural or disease conditions. Whatever the physical condition of the individual may be, if it is such that it requires some physical exertion or strain to cause the rupture the injury may properly be classed as an accidental one. If lifting 100 pounds may cause an accidental injury to one person, on what ground can it be said that a similar injury to another person by lifting 50 pounds, or 25 pounds, is not also accidental? If that is not true, then where shall we draw the line between the different physical conditions; or what shall we adopt as a standard of weight in determining whether the injury is the result of an accident or of a disease? It would not be satisfactory or logical to fix that standard at what it would require to injure one in normal health, for even persons in normal health vary in physical strength. Nor should it be said that an injury from overexertion by one in a debilitated condition is not an accident simply because it required less violent exercise to produce the injury. We cannot fix any standard of condition nor can we fix any standard of sufficiency of cause operating on the condition. The legal principle is the same, whether the injury results from lifting weights, as a can of paint, or by some other form of physical overexertion. The jury was instructed in this case that:

> By the term "personal injury" is meant damage or harm to the physical structure of the body and such diseases as naturally result therefrom. . . . If L. E. McGrady was afflicted with hardening of the arteries prior to the 2d day of January, 1923, and while engaged in heavy manual labor he suffered a hemorrhage of the brain which proximately caused his death, and which hemorrhage of the brain was due to excessive physical exertion of his labor, of if such physical exertion was a contributing cause of the hemorrhage of the brain, then such injury would be an injury sustained in the course of his employment.

Complaint was made of the charge on the ground that it stated an incorrect definition of a compensable injury under the workmen's compensation act, but this court does not think that the instruction was subject to the objection made.

Total Disability of Physician from Chronic Nephritis

(Fitzgerald v. Globe Indemnity Co. (Calif.), 258 Pac. R. 458)

The District Court of Appeal of California, third district, in affirming a judgment in favor of the plaintiff, says that in 1916 the defendant issued to him an accident and health insurance policy which provided that if disease caused the insured to be "totally and continuously unable to transact all business duties," the company would pay a prescribed indemnity for the entire period thereof. The plaintiff was a physician and surgeon who owned two farms which he had planted to walnuts and which were operated by men employed by him. The complaint alleged that he had been totally and continuously unable to transact any business duties since Feb. 9, 1918, the disability being caused by chronic nephritis; that the defendant had paid the indemnity provided to be paid by the policy for total disability up to Jan. 19, 1922, but had refused to pay any indemnity thereafter. The judgment affirmed was for the amount of unpaid indemnity specified in the policy for total disability caused by disease.

In the early part of 1918 the plaintiff, acting on the advice of his physicians, entirely abandoned his practice of medicine and surgery. He testified, and the court found, that at the same time he gave up the management and supervision of his walnut groves and farming operations. But he frequently drove his automobile on short trips and a few times on longer ones. He drove it down town nearly every day and made purchases of household supplies. He executed certain contracts. For a time he received and examined monthly reports of the farming expenses. He maintained deposits in two banks and drew checks thereon from time to time. He paid taxes, insurance, and interest on money that he had borrowed. He performed other similar acts. The defendant contended that these acts constituted the transaction of "business duties" within the meaning of that term as used in the policy of insurance. However, while those acts were business transactions, they did not constitute engaging in business in the sense in which that term is ordinarily used. The mere fact that a professional man may make contracts in

relation to his property, keep a bank account and pay his taxes, insurance and other debts does not necessarily show that he is engaging in a business outside his profession. The physician, the lawyer, the teacher, the preacher and the priest do all these things without causing any one to think that their occupations are dual. But to concede that the plaintiff's acts amounted to the transaction of business duties within the meaning of the policy would not require a reversal of the judgment. The ultimate fact to be determined was not what the plaintiff actually did in the way of business duties but what, in the exercise of common care and prudence, he was reasonably able to do. Proof of what he did was merely evidence tending to show his ability to do, just as the opinions of the physicians who testified were evidence tending to show that his ability was or was not total. This expert opinion evidence alone, in view of the nature of the plaintiff's affliction, was sufficient to create a substantial conflict, and the finding of the trial court thereon was conclusive.

The fact that the insured may do some work or transact some business duties during the time for which he claims indemnity for total disability or even the fact that he may be physically able to do so is not conclusive evidence that his disability is not total, if reasonable care and prudence require that he desist. Both the evidence and the law supported the conclusion of the trial court that the plaintiff was totally and continuously unable to transact the business duties of either occupation in which he was engaged at the commencement of his illness. His physicians advised him to desist therefrom, and they testified at the trial that he was totally and continuously unable to transact his business duties without increasing bodily waste and hastening the progress of the disease that caused the disability. It cannot be said as a matter of law that the occasional transactions in which he engaged constituted the performance of the substantial and material acts of his business or occupation in the usual and customary way, or conclusive proof that, in the exercise of reasonable care and prudence, he was able to transact such business duties.

Services Rendered on Order Signed by Foreman

(Hodgen v. Bitely et al. (Mich.), 215 N. W. R. 37)

The Supreme Court of Michigan, in adopting as its own the opinion of the trial court, says that that court tried this cause without a jury and filed an opinion in which it was stated that Earl Bitely was injured, Feb. 19, 1924, while in the employ of a company that was insured in pursuance of the workmen's compensation law. Bitely was treated by the plaintiff and had a leg amputated nine days after the accident. The plaintiff was paid for his services rendered at that time, the payment being by the company through its insurer. In October, 1924, Bitely came to the plaintiff again for treatment, and the plaintiff sent him back to his employer for authority to the plaintiff to treat him further. Bitely returned with a document addressed to the plaintiff, which said: "Please render to Mr. Earl Bitely the necessary medical services as provided for in the workmen's compensation act, for injury received on February 19, 1924, while in our employ. Nature of injury, amputation of leg. Name of employer, Higman Package Company, by J. Fisher." Thereupon the plaintiff again treated Bitely and performed another operation on him, placing him in a hospital. This suit was brought by the plaintiff for professional services from Oct. 10, 1924, to Dec. 24, 1924, $447; also for the account of the hospital for care and services in connection with the latter treatment, $385, the second account having been assigned to the plaintiff.

The court is of the opinion that Earl Bitely was not liable for this account. The plaintiff declined to commence the treatment of him and sent him back to the company for authority to do so. While the plaintiff testified that he would not finally have declined to perform the services for Bitely, he did feel that somebody should pay him for the services if authority therefor could be obtained, and that was the reason he sent him back for such authority. Bitely obtained the written authority from the employer and brought it back to the plaintiff, and thereupon the services commenced. It is evident, therefore, that the plaintiff did not in any way rely on Bitely hiring him, nor on any obligation on his part to pay him.

Was J. Fisher, the person who signed the order, authorized to sign it? The court is of the opinion that he was, and to bind the company thereby. He testified that among his duties as foreman for the company, being in charge of the workmen, was that of taking charge of any matters pertaining to injuries to the men. He had blanks for reporting such injuries and had repeatedly issued them on forms furnished to him; that he gave this order so that Bitely could receive further treatment; and that he thought the treatment would be under the workmen's compensation law, and did not know that the obligation of the insurer was limited to ninety days after the injury, under the law.

The most difficult question was as to whether the defendant Higman Package Company was liable in view of the peculiar wording of the written authority, and taking into consideration that the workmen's compensation law provides: "During the first ninety days after the injury, the employer shall furnish, or cause to be furnished, reasonable medical, surgical and hospital services and medicines when they are needed." The ninety days had long expired before the second services of the plaintiff commenced in October, 1924. It was conceded by the plaintiff that he had no redress under the workmen's compensation law, but he contended that, in view of the order, even though it did refer to the workmen's compensation law, the Higman Package Company was liable for this claim, and the court is of the opinion that the company was liable for it—both for the physician's services and for the hospital bills. If no order had been made, of course, under the law, the company would not have been liable, but giving a written order directed to the plaintiff asking him to render Bitely the necessary medical services as provided for in the workmen's compensation act, for the injuries received, did not limit it to the ninety-day period mentioned in the act. The order authorized the plaintiff to treat Bitely further, and, the work having been done, the services being rendered both by the plaintiff and by the hospital under the written authority, the claims should be paid by the Higman Package Company. The fact that Fisher's idea was that the treatment would be under the law did not change the situation, nor did it change the question of the liability of his employer.

An examination of the record satisfies the supreme court that the trial court reached the right result; the supreme court adding that, owing to the insistence that the order limited the company's liability to sums payable under the workmen's compensation act, such order, while on one of the blanks provided by the department for use by employers, was a plain direction to the plaintiff to render the necessary medical service to Bitely at the expense of the company. Otherwise it was of no effect, as the time limit for furnishing such service under the act had long since expired.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Birmingham, April 17-20. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.

American Association of Anatomists, Ann Arbor, Mich., April 5-7. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.

American College of Physicians, New Orleans, March 5-9. Mr. E. R. Loveland, The Covington, 37th and Chestnut Streets, Philadelphia, Sec'y.

American Pharmacological Society, Ann Arbor, Mich., April 12-14. Dr. E. D. Brown, University of Minnesota, Minneapolis, Secretary.

American Physiological Society, Ann Arbor, Mich., April 12-14. Dr. W. J. Meek, Science Hall, University of Wisconsin, Secretary.

Arizona State Medical Association, Tucson, April 19-21. Dr. D. F. Harbridge, Goodrich Building, Phoenix, Secretary.

Federation of American Societies for Experimental Biology, Ann Arbor, Mich., April 12-14. Dr. E. D. Brown, University of Minnesota, Minneapolis, Secretary.

Louisiana State Medical Society, Baton Rouge, April 10-12. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. John T. King, Jr., 1211 Cathedral Street, Baltimore, Secretary.

Pacific Coast Oto-Ophthalmological Society, Santa Barbara, April 18-20. Dr. Walter F. Hoffman, 817 Summit Avenue, Seattle, Secretary.

South Carolina Medical Association, Columbia, April 17-19. Dr. E. A. Hines, Seneca, Secretary.

Tennessee State Medical Association, Nashville, April 10-12. Dr. H. H. Shoulders, Lambuth Building, Nashville, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American J. Medical Sciences, Philadelphia

175: 1-152 (Jan.) 1928

Anatomy of Brain from Clinical Point of View. F. von Müller. Munich, Germany.—p. 1.
Tumors of Brain and Syphilis. F. P. Moersch, Rochester, Minn.—p. 12.
Thalamic Syndrome: Case. E. S. Gurdjian, Rochester, N. Y.—p. 18.
*Diabetes Mellitus: Death: Necropsy. A. H. Gordon, C. L. Connor and I. M. Rabinowitch, Montreal.—p. 22.
*Carotinemia. W. C. Stoner, Cleveland.—p. 31.
*Use of Dextrose in Treatment of Obesity. B. Gordon and E. von Stanley, Philadelphia.—p. 37.
*Unusual Types of Hemorrhagic Disease. H. Z. Giffin, Rochester, Minn. —p. 44.
Immediate Effect of Arterial Ligation. H. E. Pearse, Jr., Baltimore.—p. 49.
*Treatment of Chronic Auricular Fibrillation with Quinidine Sulphate. E. P. Maynard, Jr., New York.—p. 55.
*Ball Thrombus in Left Auricle: Case. G. W. Covey, R. Crook and F. L. Rogers, Lincoln, Neb.—p. 60.
*Brucella Melitensis (Abortus) Bacteremia Associated with Endocarditis. R. W. Scott and O. Saphir, Cleveland.—p. 66.
*Actinomycosis. P. O. Snoke, Philadelphia.—p. 69.
Carcinoma of Esophagus: Fifty Cases. J. Sherman, San Francisco.—p. 79.
*Diagnostic Value of Duodenal Drainage in Gallstone Disease: Significance of So-Called Bilirubin Calcium Pigment. G. M. Piersol, H. L. Bockus and H. Shay, Philadelphia.—p. 84.
*Use of Fasting Donors in Blood Transfusions. W. V. Brem, A. H. Zeiler and R. W. Hammack, Los Angeles.—p. 96.
Bile Pigments and Bile Acids of Blood in Jaundice. H. F. Shattuck, I. Katayama and J. A. Killian, New York.—p. 103.

Diabetes Mellitus and Disease of Biliary Passages.—The case reported by Gordon et al. demonstrates that, in spite of the clear history, it does not necessarily follow that diabetes following repeated attacks of gallbladder disease is due to the latter. This may explain the failures at times of surgery to alleviate or improve diabetes when associated with disease of the biliary passages. This case also emphasizes the fact that the clinical picture (the attitude, expression, color and nutrition) is not a reliable index of progress in diabetes treated with insulin. Blood analyses are here indispensable. This patient appeared to be well nourished and felt well. The postmortem observations, however, showed that the skin did not contain fat, but water. Also, because of the long duration of the disease and the arteriosclerosis, other evidence of active diabetes (glycosuria) was masked. The patient had a raised renal threshold for sugar. This case is another demonstration of the relationship between the cholesterol content of the blood and prognosis. The differential diagnosis during the final stages of the disease was difficult, because of a combination of conditions not uncommon but not frequently mentioned in the literature. Cerebral manifestations of diabetic coma may simulate those of uremia or cerebral hemorrhage. Suppression of urine, albumin and casts, high blood urea and creatinine, leukocytosis, altered reflexes and fever were all present in this case. Other clinical features of interest were the presence of insulin edema, the color of the skin and the absence of response to insulin. The pancreas and the blood vessels of the brain were the organs of special postmortem interest.

Carotinemia.—In a carefully studied case of carotinemia in an adult, the pigment was demonstrated in the blood serum by Stoner. The skin discoloration disappears on the withdrawal of foods rich in carotinoids. The condition is unassociated with disturbing symptoms, and is of particular interest only from the standpoint of differential diagnosis. It has been confused with true jaundice and vague liver trouble.

Use of Dextrose in Treatment of Obesity.—The total customary caloric intake (1,800 to 3,000 calories) was rearranged by Gordon and von Stanley in a series of eleven obese young women, so that the carbohydrate portion was administered between meals as dextrose candy. In six instances, an average weekly loss of 1.5 Kg. occurred. This suggested that dextrose administered under the conditions of the experiment was utilized largely as fuel. To a further series, a diet of between 1,100 and 1,400 calories, derived largely from fat and protein was administered at meal time. In addition, dextrose candy (100 to 150 calories) was administered between meals, usually during periods of exercise or at times when symptoms of fatigue, hunger and weakness were experienced. A fairly constant loss of weight occurred apparently without untoward effect or discomfort to the patients. It appears that weight loss to a considerable extent was due to moderate starvation at meal time, the dextrose being used principally to relieve symptoms and to supply energy during effort. It is suggested that a disturbance in carbohydrate metabolism may be responsible for the storage of fat and for certain hypoglycemic-like symptoms occurring perhaps because of insufficient available glycogen.

Hemorrhagic Diseases.—A group of five cases of severe hemorrhagic disease presenting unusual features is reported by Giffin. Cases of splenomegaly in which mild types of purpura occur are not uncommon, but in the two cases reported the features of splenic anemia are associated with a more severe type of purpura which shows the coagulation features of hemorrhagic purpura. An instance in which severe hemorrhagic disease occurred in the women of four generations without the characteristics either of hemophilia or of hemorrhagic purpura suggests that the bleeding may be due to some deficiency of the blood that has not yet been identified. An instance of severe hemorrhagic disease with all the features of hemorrhagic purpura except thrombocytopenia also suggests the possible presence of some unknown factor of coagulation which renders diagnosis at present impossible. A case of severe hemorrhagic disease with extremely high viscosity of the blood, owing to an enormous increase in the serum globulin and other changes of uncertain significance, emphasizes the lack of knowledge concerning the proteins of the blood and presents a clinical syndrome which has not been recorded.

Use of Quinidine Sulphate in Chronic Auricular Fibrillation.—In a series of fifty-three cases of chronic auricular fibrillation treated with quinidine sulphate, sinus rhythm returned in thirty-eight. In twenty-five of the entire series the rhythm remained regular for one month or more and in fifteen the sinus rhythm continued for at least six months. Evidence is presented by Maynard to show that there is a definite tendency for auricular fibrillation to become permanent. Sinus rhythm may be established five, six or even seven times over a period of years, but the time finally comes in the majority of cases when further attempts are unsuccessful. One case of collapse and sudden death following quinidine therapy is reported. Various toxic rhythms induced by quinidine are described, including auricular flutter and ventricular paroxysmal tachycardia. Sinus rhythm was established in 90 per cent of the cases in which the degree of compensation was classed as good. Short duration of fibrillation was a good prognostic sign. The effect of quinidine on the various components of the electrocardiogram is described.

Ball Thrombus in Left Auricle.—A typical case presenting the signs of mitral stenosis, auricular fibrillation, cardiac failure, embolism in an artery of the leg, loud cardiac murmur ("noise"), pronounced thrill and death is reported by Covey et al. The postmortem examination showed the presence of a typical ball thrombus occupying the left auricle, in the presence of marked mitral stenosis.

Associated Acute and Chronic Endocarditis.—An acute endocarditis superimposed on a chronic endocarditis was seen by Scott and Saphir in a patient from whose blood *Brucella melitensis* of the *abortus* variety was recovered on several occasions, both ante mortem and post mortem. The history of rheumatic fever suggests that the endocarditis was rheumatic in origin, but Aschoff's bodies were not found in the myocardium. No source of any other infection was disclosed at autopsy. Though there are recorded cases of endocarditis attributed to *Br. melitensis*, there is no proof in this case that the endocarditis was caused by *Br. melitensis* of the *abortus* variety. The authors believe that their case is one of acute and chronic endocarditis associated with bacteremia.

Actinomycosis.—The five cases of actinomycosis reported by Snoke involved the jaw, chest wall and lung, vertebrae and lung, and abdomen and tongue, respectively. In two of these cases, definite involvement occurred in or about the central system.

Bilirubin Calcium Pigment and Gallstones.—A characteristic pigment, the so-called bilirubin calcium pigment or calcium bilirubinate, has been found by Piersol et al. in the bile drained from the duodenum with sufficient constancy to give it significance in the diagnosis of gallstones. Of forty-two cases of cholelithiasis in which there was preoperative drainage, 73.8 per cent showed this pigment or cholesterin or both in the bile obtained from the duodenum. All the cases manifesting both cholesterin crystals and pigment in the bile obtained by biliary drainage proved to be cases of gallstones. In the majority of cases these elements were found only in the dark or B bile. In only 35 per cent of proved cases of gallstone were the stones visualized by oral cholecystography, whereas in the same series a preoperative diagnosis of stones was made from duodenal tube contents in 47 per cent of cases. A preoperative estimate of gallbladder function from the duodenal tube examination proved correct in 88 per cent. On the other hand, a similar estimation by oral cholecystography was found correct in only 65 per cent of cases.

Use of Fasting Donors in Blood Transfusion.—The evidence obtained by Brem et al. in one case suggests that some of the febrile reactions following transfusions may be due to toxic products of digestion in the nonfasting donor's blood, and that such reactions may be avoided by having donors fast for a certain period of time before the transfusion. In the case cited, an overnight fast seemed to be sufficient.

American Journal of Ophthalmology, Chicago

11: 1-90 (Jan.) 1928

Retinitis with Massive Exudates. L. W. Jones, Rochester, N. Y.—p. 1.
Retinitis Punctata Albescens. A. Sowers, Chicago.—p. 4.
Scleropostiridectomy, Rational Operation in Glaucoma. J. W. Jervey, Greenville, S. C.—p. 7.
Conjunctivoplasty in Certain Corneal Affections. J. Green, St. Louis.—p. 12.
India Rubber in Anterior Chamber: Case: Anterior Chamber Irrigator. W. B. Doherty, New York.—p. 16.
Sterilization of Sharp Instruments. M. H. Post, St. Louis.—p. 18.
Perithelioma of Orbit. R. W. Bledsoe, Covington, Ky.—p. 21.
Necessity for Correcting Remediable Eye Defects in School Children. W. H. Wilder, Chicago.—p. 28.
Ophthalmologic Clinic in Paris. G. O. Ring, Philadelphia.—p. 35.
Intravenous Injections of Mercurochrome in Suppurative Eye Conditions. J. N. Duggan, Bombay, India.—p. 39.
Primary Spasm of Superior Oblique Muscle. M. E. Brownell, Wichita, Kan.—p. 41.
Syphilitic Granulations of Conjunctiva. E. L. Goar, Houston, Texas.—p. 42.
Unusual Clinical Phenomenon Occurring in Case of Iritis. H. S. Gradle, Chicago.—p. 43.
Epithelial Nevus. H. D. Lamb, St. Louis.—p. 44.

Annals of Internal Medicine, Ann Arbor, Mich.

1: 273-366 (Nov.) 1927

*Epilepsia Tarda. D. Riesman and T. Fitz-Hugh, Jr., Philadelphia.—p. 273.
Allergic Reaction, Basis of Tuberculin Therapy. F. M. Pottenger, Monrovia, Calif.—p. 283.
Congenital Hypertrophy, Involving Right Side of Female, Aged 6. E. G. Wakefield, New York.—p. 292.
*Saline Wheal Test as Measure of Blood Supply in Arterial Disturbances of Extremities. W. G. Stern, Cleveland.—p. 297.
Mitral Heart Roentgenologically. D. Steel, Cleveland.—p. 302.
Rickets. H. J. Gerstenberger, J. I. Hartman, J. D. Nourse, N. C. Wetzel and D. N. Smith, Cleveland.—p. 305.
Mixed Tumor of Parotid Type, Orbital in Location. E. D. Cumming, Cleveland.—p. 310.
Chronic Ulcerative Colitis. H. W. Soper, St. Louis.—p. 313.

Epilepsia Tarda.—Twelve cases of epilepsia tarda, all of the recurrent grand mal type, are reported by Riesman and Fitz-Hugh, and a classification is suggested. The average age of onset of convulsions was 56, with 41 as the earliest and 73 as the latest. A background of combined circulatory defects is demonstrable in all cases, indicating the probability that moments of deranged cerebral circulation constitute one exciting cause of the convulsions in these cases. Differential diagnosis of the types of epilepsia tarda is presented with emphasis on their separation from uremia, in which generalized convulsions are rare and only terminal. Prognosis and treatment are briefly presented. A selected bibliography is appended.

Value of Saline Wheal Test.—Stern asserts that in the absence of edema, the intracutaneous salt solution test is a simple, rapid and accurate method of determining circulatory deficiencies in the extremities. Sixty minutes or more is the normal disappearance time of the salt solution. In all instances in which clinical circulatory deficiency exists, the disappearance time is diminished; in the area just above the seat of a gangrene (existing or threatened), it is frequently as low as five minutes.

Archives of Internal Medicine, Chicago

41: 1-140 (Jan.) 1928

*Clinical Significance of Gallop Rhythm. P. D. White, Boston.—p. 1.
Alkalis and Renal Injury. E. J. Stieglitz, Chicago.—p. 10.
*Iodine-Starch Test of Body Fluids. A. Bassler, New York.—p. 18.
Peritonitis: III. Active Immunization Against Experimental B. Coli Peritonitis. H. Goldblatt and B. Steinberg, Cleveland.—p. 42.
Blood Volume in Edema of Glomerular Nephritis and Nephrosis. G. E. Brown and L. G. Rowntree, Rochester, Minn.—p. 44.
Mumps Polyneuritis Complicated by Quadriplegia with Bilateral Facial Paralysis. W. S. Collens and M. A. Rabinowitz, New York.—p. 61.
*Effect of Iodine in Toxic Adenoma. J. B. Youmans and R. H. Kampmeier, Ann Arbor, Mich.—p. 66.
*Chronic Ulcerative Colitis: Bacterial Etiology. M. Paulson, Baltimore.—p. 75.
Logarithmic Tables for Computing Surface Area of Body According to Dubois' Formula. C. H. McCloy, New York.—p. 97.
*Intradermal Salt Solution Test in Nephritis in Adults. A. Feldman and J. S. Reifsneider, Chicago.—p. 102.
*Intestinal Absorption: Search for Low Residue Diet. K. Hosoi, Honolulu, W. C. Alvarez and F. C. Mann, Rochester, Minn.—p. 112.
Streptothrix Necrotic Bronchopneumonia. I. H. Page, New York.—p. 127.

Significance of Gallop Rhythm.—An analysis made by White of 100 patients with gallop rhythm on the basis of types, according to the time of the extra or third sound, showed sixty-four apparently protodiastolic, twelve presystolic, four systolic and twenty unclassified. Gallop rhythm is generally a bad prognostic sign; almost half of the 100 patients are known to have died within two years of the discovery of the sign; thirty-two died within six months. A considerable number of the remaining fifty-five patients were seriously ill or dead when last heard from. Gallop rhythm occurred in both young and old. Forty-eight per cent of the patients were between 50 and 70. Coronary disease alone or in combination was apparently present in 54 per cent, actual coronary thrombosis being diagnosed in 21 per cent. Hypertension alone or complicated was present in 49 per cent, syphilitic aortitis in 13 per cent, rheumatic heart disease in 12 per cent, nephritis in 12, uremia in 10, effort syndrome alone in 3, pericarditis in 3, subacute bacterial endocarditis in 2, congenital heart disease in 1 and unknown factors in 5. Congestive failure was the most outstanding characteristic, being present in at least 61 per cent. Angina pectoris occurred in 25 per cent. Cardiac asthma occurred in fourteen cases. The heart rate was usually rapid, averaging about 100. At least three fourths of the cases showed rates between 80 and 120. The blood pressure was variable, the systolic being between 100 and 150 mm. of mercury in 43 per cent, between 150 and 200 in thirty-five cases, over 200 in nineteen, and under 100 in three. Pulsus alternans was found in 21 per cent. The heart was considerably enlarged in 60 per cent, definitely normal in size in only six, and doubtful in eighteen. The heart sounds were poor in 52 per cent of the cases, and good in only fourteen. Valvular disease was uncommon, aortic regurgitation being found alone in fifteen cases, mitral stenosis alone in four and the two conditions combined in four. Apical systolic murmurs, however, were common; loud in twelve and slight to moderate in thirty-three. There were no heart murmurs in thirty-two cases. Electrocardiograms were obtained in sixty-four of the patients. Only two of these were normal. Renal function as tested by the phenolsulphonphthalein test was normal in eight and abnormal in nine of the seventeen cases so tested. The amount of nonprotein nitrogen in the blood was normal in fifteen and too high in only five of the twenty cases in which such tests were made. Digitalis as a possible factor in the production of gallop rhythm was

negligible. As a matter of fact, in some cases the gallop rhythm disappeared coincidentally with the clinical improvement following rest and the administration of digitalis.

Iodine Starch Test of Body Fluids.—Bassler has found the original test of value in diabetes mellitus, both in diagnostic and therapeutic ways. It helps in the understanding of true pancreatic disease. A digestive reason for diabetes is presented, and when the test is definite, it shows when pancreatic feedings should be employed; the dosage of insulin may then perhaps be reduced or discontinued. A series of instances of verified diseases of the gallbladder is presented in which the test was of diagnostic value and helpful in differentiating the operative from the medical type of case. The Meltzer-Lyon method has only limited value in diagnosing these disorders. It is advisable to employ this test in clinical work and in the way that it was originally proposed. Unlike most laboratory tests that are of value only when positive, it also has a value when negative.

Effect of Iodine in Toxic Adenoma.—The response to treatment with iodine in thirty unselected patients with toxic adenoma who were previously untreated with iodine was essentially the same as that seen in unselected cases of exophthalmic goiter. Whatever differences exist are apparently quantitative, not qualitative. Youmans and Kampmeier believe that any essential difference in the pathogenesis of toxic adenoma and exophthalmic goiter cannot be assumed to exist on the basis of this response to treatment with iodine.

Chronic Ulcerative Colitis.—Fourteen cases of acute exacerbations of chronic ulcerative colitis have been studied by Paulson with reference to a bacterial etiology. Ten distinct types of streptococci were isolated in these cases. No one type was present in more than three cases. Seven types of these streptococci were intravenously injected into thirty-four rabbits, five of which produced lesions in these animals. Twenty other rabbits were injected intravenously with seven types of bacteria from sources other than the bowel in cases of ulcerative colitis. The author believes that there was no difference between lesions produced in the intestines of rabbits by the intravenous injection of organisms isolated from cases of ulcerative colitis or from other sources. Grossly and microscopically, all lesions were similar, differing only as to their location within the intestinal tract. Paulson is of the opinion that the bacterial etiology of ulcerative colitis is still undetermined.

Intradermal Salt Solution Test in Nephritis.—A study of the intradermal salt solution test was made by Feldman and Reifsneider in eighteen cases of nephritis in adults with the following results: The wheals caused by the salt solution disappeared in less than thirty minutes, except in one case (case 13, alkalosis), only when edema, or a history of edema, was present. A decreasing disappearance time was associated with an unfavorable progress of the condition, and an increasing disappearance time with improvement; a very short disappearance time, which persisted in spite of treatment, was of bad prognostic significance. There was no close relationship between the retention of nitrogen and the sodium chloride and cholesterol content of the blood, on the one hand, and the disappearance time on the other. In cases in which the carbon dioxide capacity was determined, and evidence of either severe acidosis or alkalosis was found, there was also a marked shortening of the disappearance time, even in the absence of palpable edema. More examples of these types should be examined.

Low Residue Diet.—The experiments reported by Hosoi et al. suggest that the best basis for a low residue diet is lean meat. To this might be added rice, hard boiled eggs, sugars (except lactose) and probably small amounts of fruit juices, tea and coffee. The highest degrees of absorption could probably be secured by giving small amounts of food several times during the day. Experience with dogs suggests that less material will be carried into the colon if the diet is kept fairly dry. There is considerable evidence both in the experiments here reported and in the literature to show that when it is desired to prevent bowel movements, milk should not be given.

Archives of Otolaryngology, Chicago

7: 1-102 (Jan.) 1928

Teaching Bronchoscopy and Esophagoscopy. C. Jackson, Philadelphia.—p. 1.
*Pathology of Mastoiditis in Infants. B. J. McMahon, St. Louis.—p. 13.
*General Sepsis of Otitic Origin: Treatment by Blood Transfusion and Germicidal Dye. H. I. Lillie, Rochester, Minn.—p. 30.
Unusual Type of Diplacusis. D. Macfarlan, Philadelphia.—p. 41.
*Pulsion Diverticulum Combined with Mega-Esophagus. L. Van Den Wildenberg, Louvain, Belgium.—p. 44.
Deep Actinomycosis of Neck and Mediastinum. L. Van Den Wildenberg, Louvain, Belgium.—p. 50.
Aberrant Branchial Cyst Encroaching on Glottis and Causing Suffocation and Death. W. R. Watson, Philadelphia.—p. 57.
Combination Tonsil Forceps and Tongue Depressor. M. Fineberg, Montreal.—p. 59.
Functional Examination of Hearing: Deaf-Mutism and Education of Deaf: Annual Review of Literature. R. Sonnenschein, Chicago.—p. 60.

Pathology of Mastoiditis in Infants.—Of thirty-nine infants with mastoiditis, twenty-two showed the symptom complex of increased temperature, diarrhea, vomiting, loss of weight and athrepsia. Six of these died. McMahon says that the prognosis is bad if, when edema of the mucosa of the mastoid antrums is found microscopically, the "diarrhea-vomiting symptom complex" is present. The prognosis is good when fibrosis of the mucosa of the mastoid antrums is found microscopically, even though the "diarrhea-vomiting complex" is present. When the "diarrhea-vomiting complex" is not present, the prognosis is equally good whether the mucosa of the mastoid antrums shows edema or fibrosis microscopically.

Treatment of General Sepsis by Blood Transfusion and Dye Germicides.—Blood transfusion and the intravenous injection of dye germicides has been suggested as a valuable supportive therapeutic measure when used in conjunction with well directed surgical intervention in certain cases of general sepsis secondary to suppurative disease of the temporal bone. Lillie's experience has convinced him that their use as an adjunct therapeutic measure is rational if the cases are properly chosen and the agents properly prepared and administered. The supportive effect of blood transfusion is to shorten convalescence; the use of the germicidal dye is a curative measure. He neither defends nor advocates their use.

Pulsion Diverticulum and Mega-Esophagus.—Van Den Wildenberg has observed twenty-five cases of pulsion diverticulum, and of these, one was a case of epiphrenic type. The diverticulum in the case reported was of the volume of a walnut, located at about 2 cm. above the cardia, forward and to the right, with a large opening narrowing itself temporarily by spasm. There was also dilatation of the esophagus, with prolonged stasis in the esophagus and in the diverticulum.

Atlantic Medical Journal, Harrisburg, Pa.

31: 219-282 (Jan.) 1928

Pennsylvania's Greatest Public Need. C. H. Frazier, Philadelphia.—p. 219.
*Cervical Rib. A. W. Adson, Rochester, Minn.—p. 222.
Cancer of Rectum: Symptoms. C. C. Mechling, Pittsburgh.—p. 232.
Id.: Diagnosis. J. H. Allen, Philadelphia.—p. 234.
Id.: Choice of Operation. D. B. Pfeiffer, Philadelphia.—p. 236.
Cardiospasm: Two Cases. J. D. Garvin, Pittsburgh.—p. 240.
"Mental Twist." T. Diller, Pittsburgh.—p. 241.
*Case of Meningococcic Meningitis Treated by Lumbar, Cisternal and Ventricular Routes. R. N. Klemmer, Lancaster, Pa.—p. 242.

Cervical Rib.—Three hundred and three cases of cervical rib are analyzed by Adson. Roentgen-ray examination revealed a cervical rib on the right side in seventy, a cervical rib on the left in ninety-one, and bilateral cervical ribs in 143. In 167 of the series, the presence of cervical ribs was discovered accidentally, as there were no symptoms. In 100, although the roentgenograms were positive, the symptoms were mild and of such a character that surgical treatment was deemed inadvisable. In seventy-seven of the 100 there was indefinite pain in the neck and shoulder, radiating only slightly down the arm and hand; in five, the pain was localized and radiated along the ulnar nerve; in two, it radiated along the course of the internal cutaneous nerve, and in four, it radiated definitely over the brachial plexus, but was not severe. In twelve cases the pain was exaggerated by rotation of the head, or by elevation of the chin. Slight atrophy was observed over the ulnar distribution in twelve.

Subjective anesthesia was present in the ulnar distribution in seven cases; in the internal cutaneous in two, and in the brachial distribution in four. Circulatory disturbance was present in four. Surgical treatment was carried out in forty-one cases. The anterior approach and tenotomy of the scalenus anticus are preferred by Adson to the transcervical approach and resection of the cervical rib, since the same relief is offered, the procedure is less formidable, and postoperative numbness in the arm and palsy of the brachial plexus are avoided.

Treatment of Meningococcic Meningitis.—The successful cure of an unusually resistant case of meningococcic meningitis is reported by Klemmer. Over a period of twenty-two days the patient received six spinal, one ventricular, and nine cisternal injections of antimeningococcic serum. It is interesting to note that, for each injection, save one, she was under complete ether anesthesia for periods of from one half to more than one hour, without apparent deleterious effect. On several occasions when puncture was attempted without ether anesthesia, she begged to be "put to sleep." One year and four months after discharge, the patient was apparently in perfect physical condition.

Boston Medical and Surgical Journal

197: 1385-1438 (Jan. 26) 1928

Selections from Medical Writings and Sayings of Dr. Oliver Wendell Holmes. G. H. Monks, Boston.—p. 1385.
Surgery of Pulmonary Tuberculosis. W. Whittemore, Boston.—p. 1395.
*Diagnosis and Prognosis of Juvenile Tuberculosis. H. D. Chadwick, Westfield, Mass.—p. 1399.
Protection of Firemen Against Occupational Hazards. S. Warren, Boston.—p. 1401.

Juvenile Tuberculosis.—Chadwick's paper is based on the examination of 50,000 school children between the ages of 5 and 15, an investigation carried on during the last three years by the Massachusetts Department of Public Health. Of nearly 25,000 children, 29.6 per cent reacted to the Pirquet tuberculin test. This group was made up of 16 per cent of contacts and many underweight children. The percentage of reactors among the contact children was nearly twice as high as among the noncontact group. The children who were underweight had a little higher percentage of reactors than those who were average weight. The rural group showed 27.5 per cent reactors as compared with 29.9 per cent for the urban children. All the school children in three small towns were given the tuberculin test, and the reactors averaged 16 per cent. A diagnosis of hilum tuberculosis was made in 3.7 per cent of those examined; 10.4 per cent more were classified as suspects. Of the reactors, 12.5 per cent were diagnosed as having hilum tuberculosis and 35 per cent more of them were classified as suspects. Forty-seven and five-tenths per cent of the reactors, therefore, appeared to be in need of special care or treatment. This would be equivalent to between 9 and 10 per cent of the whole school population below the high school grade. The prognosis in those children, if the condition is discovered before the secondary or adult type develops, is excellent, provided they receive good home supervision or care, or are given preventorium or sanatorium treatment. It is probable that many of the deaths from tuberculosis that occur in adolescence and early adult life are the result of massive infection in childhood that was unrecognized and untreated. In the early pulmonary case in children, if found and treated before tubercle bacilli are present in the sputum, the prognosis is good. If, however, these secondary lesions go on to the ulcerative stage and bacilli are set free, the child, if under 16, will almost invariably die of tuberculosis, regardless of what treatment is given.

Colorado Medicine, Denver

25: 1-42 (Jan.) 1928

Renaissance of Surgery in Europe Toward Close of Middle Ages. A. Brown, Omaha.—p. 3.
Mechanism of Formation of Hydronephrosis and Hydro-Ureter. W. M. Spitzer, Denver.—p. 8.
*Spinal Fractures. A. Thomas, Pueblo.—p. 19.
Desensitization to Tuberculoprotein. G. H. Cattermole, Boulder.—p. 25.
Symptomatology and Treatment in Chronic Ulcerative Colitis. A. J. Chisholm, Denver.—p. 28.
Goiter Problem. S. D. Van Meter, Denver.—p. 31.
Closure of Abdominal Incision. F. C. Buchtel, Denver.—p. 41.

Spinal Fractures.—Among 100 cases of spinal fractures reviewed by Thomas there were eighteen deaths; fourteen patients with permanent and total disability; thirty patients with a permanent partial disability averaging 50 per cent; twenty-six patients without any disability, and twelve patients unaccounted for. Of thirty-four patients with crush fracture without cord lesion, nineteen (55 per cent) had a permanent disability averaging over 50 per cent. Of seventeen in whom the fracture was limited to the transverse processes, ten (59 per cent) had a permanent disability averaging from 30 to 40 per cent. Thomas feels that in the face of such results as are obtained by conservative methods of treatment, operative fixation of the fractured vertebrae seems justified in the cases of body fractures uncomplicated by cord injury.

Florida Medical Association Journal, Jacksonville

14: 319-366 (Jan.) 1928

Tonsil as Primary Focus of Infection. F. P. Herman, West Palm Beach.—p. 319.
Why General Practitioner Should be Familiar with Anatomy and Pathology of Mastoid and Petrous Portions of Temporal Bone. J. B. Parramore, Jacksonville.—p. 337.
Treatment of Eclampsia. C. J. Collins, Orlando.—p. 340.
Facial Paralysis with Marked Vertigo. J. D. Gable, Lake City.—p. 342.
Pathologic Currents and Asthma. H. Byrd, Tampa.—p. 344.
Vincent's Infection of Skin with Secondary Infection of Prepuce. E. D. French, Miami.—p. 347.
Accidental Denudation of Scrotum and Penis. H. Q. Jones, Fort Myers.—p. 349.
Preoral Endoscopy: Cases. S. B. Forbes, Tampa.—p. 350.

Georgia Medical Association Journal, Atlanta

17: 1-49 (Jan.) 1928

Etiology of Urinary Infections in Male. E. Floyd, Atlanta.—p. 1.
Increasing Usefulness of Wassermann Test. P. Eaton and F. L. Damren, Augusta.—p. 5.
Otomycosis. A. G. Fort, Atlanta.—p. 8.
Injection of Internal Hemorrhoids: Fifty Cases. M. C. Pruitt, Atlanta.—p. 10.
Rat Bite Fever in Georgia. R. S. Leadingham, Atlanta.—p. 16.
Chronic Duodenal Ileus. J. K. Quattlebaum, Savannah.—p. 20.
So-Called Irreducible Minimum in Surgical Mortality. C. W. Roberts, Atlanta.—p. 24.
Community and Small Hospital. J. Van De Vrede, Atlanta.—p. 30.
Diagnosis and Treatment of Pulmonary Tuberculosis. J. A. Redfearn, Albany.—p. 32.
Public Health from Business Man's Standpoint. W. Mizell, Jr., Folkston.—p. 34.

Illinois Medical Journal, Oak Park

53: 1-76 (Jan.) 1928

Relation of Medical School to Profession. I. S. Cutter, Chicago.—p. 21.
Relation of Medical School to Community. F. C. McLean, Chicago.—p. 24.
Gallbladder or Upper Abdominal Conditions. C. E. Humiston, Chicago.—p. 28.
Fractures of Humerus. F. G. Dyas, Chicago.—p. 30.
Immunities: Their Possibilities. J. W. Van Derslice, Oak Park.—p. 31.
Meckel's Diverticulum. H. N. Rafferty, Robinson.—p. 34.
Foreign Body (Catheter) in Peritoneal Cavity. G. L. Armstrong, Taylorville.—p. 39.
Fractures About Elbow Joint. P. H. Kreuscher, Chicago.—p. 41.
Gastric Carcinoma. B. D. Baird, Galesburg.—p. 44.
Carcinoma of Breast with Electrical Resection and Radiotherapy. B. H. Orndoff, Chicago.—p. 46.
Articular and Juxta-Articular Fractures. H. B. Thomas, Chicago.—p. 50.
Goiter Classification and Nomenclature: Relation to Iodine Therapy. J. H. Hutton, Chicago.—p. 53.
Management of Asthmatic. S. M. Feinberg, Chicago.—p. 58.
Tuberculosis in Mexicans. J. J. Mendelsohn, Chicago.—p. 62.
Psychoses of Shakespearean Characters. C. L. Whitmire, Augusta, Ga.—p. 64.

Indiana State M. Association Journal, Fort Wayne

21: 1-50 (Jan.) 1928

*Catheter Cystitis—Misnomer. H. Cabot, Ann Arbor, Mich.—p. 1.
*O-Iodoxybenzoic Acid in Treatment of Arthritis. W. C. Service, Indianapolis.—p. 5.
Pernicious Anemia. A. S. Giordano, South Bend.—p. 12.
Gallbladder Cases (Surgical Clinic). J. Y. Welborn, Evansville.—p. 15.

Catheter Cystitis.—Cabot asserts that there is no evidence to show that the catheter ever played any considerable part in the production of infection. In every case of infection consequent on overdistention in reflex retention of urine, there is only one person responsible, namely, the surgeon.

O-Iodoxybenzoic Acid in Treatment of Arthritis.—Service reports his experience in the treatment of eighteen cases of arthritis—acute, chronic rheumatic, gonorrheal, atrophic and

hypotrophic—with the ammonium salt of *o*-iodoxybenzoic acid. The solution was prepared not more than fifteen minutes prior to injection, and in all cases injection was made in the cubital vein. The amount injected and the time required for injection depended largely on the case and the severity of the reaction to the drug. In the earlier cases 0.5 Gm. doses were used and from fifteen to thirty minutes taken for the injection, while in the later cases larger doses of usually 1 Gm. were used and from five to ten minutes taken for the injection. The injections were given at intervals of from three days to a week or longer apart, and all patients were confined to bed for the injection and for at least six hours afterward. Immediately following the injection, a hot magnesium sulphate pack was applied at the site of injection for a period of six hours. The most striking result of the treatment was the prompt relief of pain. The next most striking result was the relief of muscle spasm. Swelling was, as a rule, the most difficult symptom to relieve. In a majority of the cases, especially those of gonorrheal origin, the swelling remained for some time after complete relief of pain and muscle spasm. Subsequent doses of the drug served to reduce the swelling. The drug produced a general leukocytosis, chiefly in the polymorphonuclear cells. The red blood cell count as a rule was not materially affected. After several injections there was usually a slight decrease in the number of red blood cells. There was usually a slight rise in temperature following the injection of the drug, but this returned to normal within a few hours. Acute joint infections are most responsive to treatment. The removal of foci of infection and general hygienic care are to be used in conjunction with the drug in the treatment.

Johns Hopkins Hospital Bulletin, Baltimore

42: 1-65 (Jan.) 1928

*Vacciniform Blepharitis Due to Atypical Herpes Virus. H. B. Andervont and J. S. Friedenwald, Baltimore.—p. 1.
*Heart in Mushroom Poisoning. A. S. Hyman, New York.—p. 8.
Area Frontalis of Cerebral Cortex of Cat Controls Postural Reflex. O. R. Langworthy, Baltimore.—p. 20.

Vacciniform Blepharitis Due to Atypical Herpes Virus.—The eruption on the eyelids in the case reported by Andervont and Friedenwald in no way suggested herpetic infection, and except for the history of previous vaccination would have been regarded as a typical example of accidental infection with vaccine virus. From this case a virus was obtained which, when inoculated into rabbits, produced lesions and symptoms similar to those produced by the herpes virus. Animals surviving infection with this virus were immune to typical strains of herpes virus. This strain, however, exhibited a difference from other strains of herpes virus in that the intracranial infection of rabbits could be elicited only after a long series of corneal passages.

Heart in Mushroom Poisoning.—A case of *Amanita phalloides* poisoning presenting cardiovascular symptoms has been studied by Hyman by graphic and other methods. Electrocardiographic examination revealed changes usually ascribed to right bundle-branch block. An irregularity in the pulse was found to be due to right ventricular extrasystoles.

Journal of Infectious Diseases, Chicago

42: 1-92 (Jan.) 1928

Proteins of Egg White: Their Relationship to Blood Proteins of Domestic Fowl as Determined by Precipitin Reaction. L. Hektoen and A. G. Cole, Chicago.—p. 1.
*Skin Reactions in Rheumatic Fever (Birkhaug Test). A. D. Kaiser, Rochester, N. Y.—p. 25.
Specific Precipitin Reaction of Muscle Hemoglobin of Dog. L. Hektoen, Chicago, F. S. Robscheit-Robbins and G. H. Whipple, Rochester, N. Y.—p. 31.
Erysipelas: VII. Standardization of Erysipelas Streptococcus Antitoxin on Man. K. E. Birkhaug, Rochester, N. Y.—p. 35.
Surface Colony Types of Cl. Botulinum on Blood Agar. P. Schoenholz, San Francisco.—p. 40.
Effect of Concurrence on Typhus and Rocky Mountain Spotted Fever Infections in Guinea-Pigs. F. Breinl, Prague, Czechoslovakia.—p. 48.
*Specificity of Scarlet Fever Streptococci. S. I. Zlatogoroff and W. S. Derkatch, Ukrania, U. S. S. R.—p. 56.
Metabolism of Abortus-Melitensis Group: II. Nitrogen Metabolism. J. G. McAlpine and C. A. Slanetz, Storrs, Conn.—p. 66.
Id.: III. Glucose Utilization. J. G. McAlpine and C. A. Slanetz, Storrs, Conn.—p. 73.
Successful Cultivation of Gonococcus on Blood Agar Plates. R. D. Herrold, Chicago.—p. 79.
Comparison of B. Chauvoei Strains from Cattle and Sheep. E. Jungherr, Bozeman, Mont.—p. 84.

Skin Reactions in Rheumatic Fever.—Eight hundred children from 1 week to 16 years of age were tested intradermally with 0.1 cc. of a 1:100 dilution of the toxic filtrate from cultures of the nonmethemoglobin-forming streptococcus isolated by Birkhaug from cases of rheumatic fever. Approximately 32 per cent of all the children tested reacted positively to the test. Separating the results into groups, Kaiser found that 20 per cent were positive when there was no history of rheumatic infection or of repeated attacks of sore throat; 35 per cent were positive when there was a history of repeated attacks of sore throat, and 72 per cent were positive when there was a history of rheumatic infection. There is no parallel reaction with the Schick or the Dick tests. It has not been definitely ascertained whether a positive Birkhaug test indicates a susceptibility to infection with the streptococcus isolated from rheumatic fever, or whether it is an allergic phenomenon of a specific nature similar to the tuberculin test. The results with the Birkhaug test suggest that a positive skin reaction justifies the conclusion that a definite biologic relationship exists between the toxin produced by the nonmethemoglobin-forming streptococcus (Birkhaug) and the hypersensitive state of the skin of persons stigmatized by rheumatic infection. These studies are in complete agreement with Birkhaug's original results with the toxin isolated by him.

Specificity of Scarlet Fever Streptococci.—Toxins produced by seventeen strains of scarlatinal streptococci and thirteen strains of nonscarlatinal streptococci were studied by Zlatogoroff and Derkatch. By application of the Dick test twelve strains of scarlatinal streptococci out of seventeen proved toxic, or filtrates of these broth cultures diluted 1:2,000 caused a positive skin reaction, and five proved slightly toxic. As to thirteen cultures of streptococci of other origin, six proved toxic, four showed a weak toxicity and three were atoxic. Using the scarlatinal streptococcic toxin on patients at the onset of scarlet fever, they obtained positive Dick reactions in 35.7 per cent. In the early convalescents there were positive reactions in 33.7 per cent and in patients late in the disease there were positive reactions in 50.6 per cent. Nonscarlatinal streptococcic toxin used for the Dick test in patients who had freshly contracted the disease caused positive reactions in 12.5 per cent; when used in early convalescents 20.8 per cent gave positive reactions, and in patients late in the disease, positive reactions occurred in 44.6 per cent. The Dick reaction was positive in nineteen of twenty-three cases of scarlet fever with lymphadenitis, in six of seventeen cases with nephritis, and in three of five cases of scarlet fever associated with otitis purulenta. Similar results were obtained with the nonscarlatinal streptococcic toxin. Substances producing the phenomenon of extinction (Schultz-Charlton) were obtained by immunization with scarlatinal as well as nonscarlatinal streptococci. Scarlatinal serums gave the reaction of flocculation (precipitation) with toxins of streptococci derived from various pathogenic sources. These observations do not confirm the conception of the specificity of scarlet fever streptococci.

Journal of Urology, Baltimore

19: 1-94 (Jan.) 1928

Practical Value of Chemical Analysis of Blood in Urologic Conditions. C. G. Bandler and J. A. Killian, New York.—p. 1.
*Aspiration of Testis in Diagnosis and Prognosis of Sterility. M. Huhner, New York.—p. 31.
Biochemical Studies of Prostatovesicular Secretions. J. F. McCarthy, C. T. Stepita, M. B. Johnston and J. A. Killian, New York.—p. 43.
*Vasoligation Preventive of Epididymitis Before and After Prostatectomy. E. P. Alyea, Baltimore.—p. 65.
Gradual Decompression of Bladder with Ureteral Catheter. W. W. Scott, Baltimore.—p. 81.
*Acute Anterior Gonorrheal Urethritis Cured with Acriflavine. M. L. Boyd, Atlanta, Ga.—p. 89.

Diagnosis of Sterility in Male.—Huhner insists that operation for the relief of male sterility should not be undertaken until aspiration of the testis has first been performed. In the most hopeless cases of azoospermia, spermatozoa can be found on aspiration in about 40 per cent of the cases.

Prevention of Epididymitis by Vasoligation.—Alyea advises vasoligation as a routine in all cases of prostatic obstruction at the time of the patient's admission to the hospital and before urethral instrumentation or the insertion of a retention catheter. In fifty cases of prostatectomy in which ligation was done, epididymitis occurred in four.

Treatment of Gonorrheal Urethritis with Acriflavine.—With a 1:1,000 aqueous solution of the English preparation (Boots) of acriflavine, Boyd has been able to control acute gonorrheal urethral infections completely, provided the treatment is begun before the infection has reached the posterior pendulous or bulbous portion of the urethra. Two injections are made daily, one in the morning and one in the late afternoon; and no other medication is used during the first week unless the patient is given some mild urinary sedative. After voiding, the patient lies down and about 1 or 2 drachms (3.75 or 7.50 cc.) of the solution is injected into the urethra. This is held in with pressure, exerted by the forefinger and thumb, on the urethra back of the glans. A piece of absorbent cotton, of a good grade and about 1 inch wide and 3 inches long, is then laid over the meatus, with its ends carried back above and below the penis, and the pressure on the urethra is released; around the penis is wrapped another similar piece of cotton, and the patient is kept lying on the table for from ten to fifteen minutes with the penis held upright. By the end of that time nearly all of the acriflavine has oozed out of the urethra into the cotton. Usually after the first injections of acriflavine there is a marked improvement. The discharge often disappears in twenty-four hours. Rarely is there any evidence of activity after forty-eight hours. In most cases the gonococci have disappeared from the discharge after twenty-four to forty-eight hours. After six or seven days the acriflavine treatments are stopped and irrigations of warm, weak, potassium permanganate (2 grains, or 0.13 Gm., to a quart) are given once or twice a day. At home the patient employs a urethral injection of either a 5 per cent aqueous solution of neosilvol or a 1 per cent aqueous solution or strong silver protein.

Kansas Medical Society Journal, Topeka

28: 1-36 (Jan.) 1928

Use of Iodides in Goiter. V. E. Chesky, Halstead.—p. 1.
Coronary Occlusion: Case. C. E. Coburn, Kansas City.—p. 4.
Suicides. K. A. Menninger, Topeka.—p. 6.
Diagnosis and After Treatment of Severe Infections of Hand. S. L. Koch, Chicago.—p. 10.
Nephrolithiasis. W. J. Aldrich, Independence.—p. 17.
Bile Tests on Blood. M. Dupray, Hutchinson.—p. 17.
Infections of Upper Respiratory Tract. O. S. Gilliland, Kansas City, Mo.—p. 19.

Kentucky Medical Journal, Bowling Green

26: 1-48 (Jan.) 1928

Importance of Cystitis as Symptom of Surgical Lesions of Urinary Tract. S. C. McCoy, Louisville.—p. 4.
Pulmonary Tuberculosis. J. A. Britton, Chicago.—p. 6.
Ruptured Appendix with Extensive Peritonitis: When Shall We Operate? F. A. Jones, Paducah.—p. 8.
Focal Points of Infection Producing Toxemia. H. H. Roberts, Georgetown.—p. 10.
Diagnosis and Localization of Spinal Cord Tumors. L. K. Baldauf, Louisville.—p. 14.
Stenosis of Alimentary Canal: Cases. G. Sherrill, Louisville.—p. 21.
Scarlet Fever. J. W. Bruce, Louisville.—p. 29.
Pertussis. P. F. Barbour, Louisville.—p. 34.
Cancer of Lingual Tonsil. S. G. Dabney, Louisville.—p. 38.
Eye Strain as Cause of Headache. J. F. Dunn, Arlington.—p. 42.

Medical Journal and Record, New York

127: 57-116 (Jan. 18) 1927

Sclerotic Blood Vessels of Female Genitalia as Cause of Gynecologic Symptoms and Reason for Failure of Conservative Pelvic Surgery. C. L. Larkin, Waterbury, Conn.—p. 57.
Senescence and Senility. L. Williams, London.—p. 62.
Outstanding Events in History of Pulmonary Tuberculosis. W. P. Nolan, Staten Island, N. Y.—p. 64.
Value of Iodine in Nose and Throat Affections. W. H. Porter, New York.—p. 67.
Diathermy in Pneumonia and Its Sequelae. A. A. Lilien and J. Echtman, New York.—p. 68.
National Traits in Medicine with Special Reference to Jew. H. A. Savitz, Providence, R. I.—p. 70.
Stomatology in Relation to Prosthetic Dentistry. L. Ottofy, Chicago.—p. 73.
Medical Photography: Practical Considerations. H. Goodman, New York.—p. 76.
Evaluation of Renal Function Tests. G. J. Eckel, K. G. Mowat and W. H. Krombein, Buffalo.—p. 79.
Rôle of Urology in Present-Day Medicine. W. J. Ezickson, Philadelphia.—p. 82.
*Comparison of Precipitation Test with Complement Fixation Test in Serum Diagnosis of Syphilis: Based on 2,447 Tests. J. W. Smith, Jr., New York.—p. 84.
Use of Diathermy in Acute and Chronic Gonorrhea. L. L. Michel, New York.—p. 87.
Suppurative Pericystitis. G. Greenberg, New York.—p. 89.
Contracture of Vesical Neck. S. E. Kramer, Perth Amboy, N. J.—p. 92.
Maimonides as Portrayed in Scott's Talisman. L. J. Bragman, Syracuse, N. Y.—p. 95.
Wonders of Obstetric Science, Related by Simon Goulart. C. G. Cumston, Geneva, Switzerland.—p. 96. C'td.

Comparison of Complement Fixation and Precipitation Tests.—On a basis of 117 disagreements in a total of 2,447 tests, Smith says that the complement fixation test and the precipitation test for the serum diagnosis of syphilis as done in the second corps area laboratory, in accordance with the standard methods of the United States Army, agree in 95.23 per cent and disagree in 4.77 per cent of cases. The percentage of false positives was: Kahn, 1.47; Craig, 1.10.

Nebraska State Medical Journal, Norfolk

13: 1-40 (Jan.) 1928

*Aberrant Appendix. A. I. McKinnon, Lincoln.—p. 1.
Otitic Brain Abscess: Case. E. B. Brooks, Lincoln.—p. 4.
*Diabetes Mellitus in Infancy and Childhood. H. B. Morton, Doniphan.—p. 9.
Child Nutrition Work in Lincoln Public Schools. M. J. Breuer, Lincoln.—p. 12.
Anus (Applied Anatomy). R. R. Best, Omaha.—p. 17.
Thrombo-Angiitis Obliterans. A. E. Cook, Randolph.—p. 19.
Edema of Brain and Eclampsia Neonatorum in New-Born. F. Clarke, Omaha.—p. 20.
Case of Otomycosis. F. L. Wilson, Stuart.—p. 21.

Aberrant Appendix.—McKinnon is convinced that the high mortality of appendicitis is due to the physician's failure to diagnose an acute inflammation of an aberrant appendix. Five cases are reported.

Diabetes Mellitus in Infant.—Morton reports a case of diabetes mellitus in an infant, aged 12 months, in whom treatment with insulin was entirely successful.

New Jersey Medical Society Journal, Orange

25: 1-82 (Jan.) 1928

*Serum Treatment of Disease by Intravenous Injection. G. T. Spencer, Elizabeth.—p. 1.
*Principles of Intravenous Medication in Biologic and Chemotherapy. J. A. Kolmer, Philadelphia.—p. 4.
Treatment of Pneumonia with Pneumococcus Antibody Solution. F. M. Huntoon, Swartmore, Pa.—p. 9.
*Dye Therapy of Acute Infections. R. A. Kilduffe, Atlantic City.—p. 13.
Therapeutic Value of Blood Transfusion. J. W. Gray, Newark.—p. 17.
*Pernicious Anemia. F. M. Allen, Morristown.—p. 22.
Operative Treatment of Duodenal Ulcer. F. J. McLoughlin, Jersey City.—p. 26.

Serum Treatment of Disease.—Spencer emphasizes the fact that the present chief objection to intravenous serotherapy is the possibility of the occurrence of an acute anaphylactic reaction even before the injection is completed. A physician may give thousands of intravenous serum treatments with few or no consequences, but once he has experienced the clinical picture presented by the sudden collapse of a patient almost into, or actually into, death itself, he will hesitate long before inviting in any way a possible repetition of such an event. It is the shock type of reaction which leads even enthusiastic advocates of intravenous serum medication to admit that the slower routes of administration are preferable if satisfactory therapeutic results may thereby be attained.

Principles of Intravenous Medication.—Kolmer discusses intravenous therapy from all angles. He says that intravenous medication should never be the method of choice if subcutaneous, intramuscular or oral routes of administration are possible and meet the requirements. As a general rule, intravenous injections are indicated under grave circumstances, in acute conditions and emergencies, or when the medicament is of such a nature that it cannot be otherwise administered.

Dye Therapy of Acute Infections.—Kilduffe feels that the rather empiric use of one or two dye compounds in arbitrary dosage based mainly on body weight must be replaced by some more rational plan to be evolved from the cooperative efforts of the laboratory worker and the clinician. He pleads that the resort to intravenous therapy by dye compounds should not be left until the patient is in a moribund condition.

Liver Feeding in Anemias.—In nonpernicious cases of anemia, Allen has had better results from liver feeding when salt was excluded from the diet. He cites a number of cases in point.

New York State Journal of Medicine, New York

28: 59-120 (Jan. 15) 1928

*Dangers of Metastases from Incomplete Removal of Malignancies of Skin. A. R. McFarland, Rochester.—p. 59.
Doctor and Insurance Adjuster. A. L. Hall, Fulton.—p. 61.
Does Psychiatry Need Help? H. G. Matzinger, Buffalo.—p. 64.
Dangers of Surgical Movies and How to Avoid Them. J. Sarnoff, New York.—p. 67.
Problems of Adolescence. H. J. Cronnin and E. A. Sullivan, Cambridge, Mass.—p. 69.
*Erect Percussion Pain Method of Abdominal Diagnosis. L. W. Kohn, New York.—p. 75.
Examination of Contents of Abdomen by Ausculatory Percussion. E. M. Moshur, New York.—p. 77.
Recorded Causes in 500 Stillbirths in New York City. L. W. Nathan and G. J. Drolet, New York.—p. 78.
Treatment of Toxemias of Pregnancy. H. J. Stander, Baltimore.—p. 80.
Pupil in Diagnosis. T. H. Curtin, New York.—p. 85.

Pigmented Carcinoma with Metastases.—McFarland reports six cases of pigmented carcinoma in which extensive metastases occurred after removal or attempted removal of the primary tumor. He urges that great caution should be used in treating pigmented lesions of the skin. If it is decided that a certain lesion should be removed, it should be destroyed very thoroughly and not irritated by ineffectual methods of treatment.

Erect Percussion in Abdominal Diagnosis.—Kohn endorses the value of percussion of the abdomen with the patient in the erect position as first proposed by Ehrlich in 1923. The patient is unable to protect the tender area through the medium of abdominal muscular contraction, and the transmission of an impulse to a diseased focus by percussion is far more satisfactory when the patient stands erect than when he is lying down. Especially is this true of the upper part of the abdomen. In the erect position, the organs of the upper abdomen uncover themselves to a certain extent. This is especially true in the atonic abdomen. Valuable information may be gleaned from the degree and extent of the sensitiveness of a segment, and it is from such information that intelligent conclusions should be formulated. Finally, it must be emphasized that this method of diagnosis is said to find its particular field of application in ascertaining the existence of a tender abdominal organ whose impressions are transmitted to a certain segment.

Physical Therapeutics, Baltimore

45: 559-614 (Dec.) 1927

Use of Artificial Chemical Light, Especially in Tuberculosis. A. Reyn, Copenhagen, Denmark.—p. 559.
Electrothermic Methods in Treatment of Inoperable Cancer of Breast. W. H. Schmidt, Philadelphia.—p. 569.
Radiant Energy and Protoplasmic Action. E. N. Kime, Indianapolis.—p. 581.

Public Health Reports, Washington, D. C.

43: 1-53 (Jan. 6) 1928

Food of Culicine Larvae: Food Organisms in Pure Culture. M. A. Barber, Washington, D. C.—p. 11.

43: 55-110 (Jan. 13) 1928

Scarlet Fever: Prevention and Control. J. W. Schereschewsky and R. E. Dyer, Washington, D. C.—p. 57.

Virginia Medical Monthly, Richmond

54: 607-676 (Jan.) 1928

Life of Lord Lister. E. J. Horgan, Washington, D. C.—p. 607.
Cancer of Colon and Rectum. J. S. Horsley, Richmond.—p. 612.
Tabloid Dip into History. F. Hancock, Norfolk.—p. 617.
Then and Now. Z. V. Sherrill, Marion.—p. 624.
Glaucoma. W. T. Davis, Washington, D. C.—p. 628.
Some Little Recognized Causes of Chronic Symptoms. R. L. Raiford, Franklin.—p. 636.
Methods of Improving Mining Camp Sanitation from Standpoint of Industrial Medicine. J. G. Bentley, Blackwood.—p. 638.
Tuberculous Meningitis in Infancy and Childhood: Twelve Cases. N. W. Sisson, New York.—p. 640.
Necessity for Careful Preoperative Medical Examination of Surgical Patients: Recognition of Postoperative Medical Complications. B. P. Seward, Richmond.—p. 644.
Why County Medical Society? C. G. Greear, Honaker.—p. 648.
Frequency of Tuberculous Involvement of Right Lung. L. M. Hines, Sanatorium.—p. 649.
Treatment of Abnormal Obstetrics at Lying-In Hospital of New York City. H. Sutelan, Norfolk.—p. 652.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1:39-82 (Jan. 14) 1928

Early Detection and Supervision of Rheumatic Infection in Children. G. A. Allan.—p. 39.
Field Vision and Near Vision. F. Fergus.—p. 42.
Plea for National Laboratory for Study of Mental Abnormality. R. J. A. Berry.—p. 46.
*Treatment of Lupus Vulgaris. J. Beatty.—p. 47.
Case of Erythro-Edema or "Pink Disease." D. I. Currie.—p. 48.
Series of Consecutive Operations on Mastoid. J. A. Gibb.—p. 49.
*Etiology of Leukemia. H. M. Woodman.—p. 50.
*Foreign Body in Bladder. A. R. Thompson.—p. 51.
*Intestinal Obstruction in Infant. E. A. C. Wilson.—p. 51.
Novel Hemostat. A. Hopkins.—p. 52.
Vesical Bilharzia: Double Infection with S. Hematobium and S. Mansoni. H. Fairbairn.—p. 52.
Acute Pneumonia Treated by Sodium Nucleinate. P. S. Hichens and R. E. Gibson.—p. 52.

Treatment of Lupus Vulgaris.—The application found most generally useful by Beatty in the treatment of lupus vulgaris is a potassium-phenol mixture. In a 4 cc. wide-mouthed sample bottle stoppered by a rubber cap is placed 2.5 cc. of a solution of potassium hydroxide (1 part to 2 parts of water) in which is suspended precipitated calcium carbonate (1 part), and 1.5 cc. of phenol (carbolic acid). A pencil of cotton-wool wrapped round the point of a forceps is dipped in the fluid and the area rubbed. As the rubbing is continued, the lupus nodules start out as purple spots, and nodules not previously noted can be detected. When these purple spots are well marked, the application is stopped; if it is continued, the whole area will turn a purplish black. A piece of unmedicated lint is cut the size of the area of disease, and on this is placed a fairly thick coating of a paste consisting of equal parts of salicylic acid, sodium salicylate and cane sugar, with enough glycerin to make a soft paste. This is applied to the area treated and the whole covered with zinc oxide adhesive plaster, which overlaps for some distance on all sides so as to make an impervious dressing. The application is repeated twice a week, in most cases for four weeks, though not so long in superficial cases. On the removal of the first dressing, a granulating surface is found, no lupus nodules being visible, but if the wound were allowed to heal some nodules would be found. Repetition of the treatment is therefore necessary, but after the first treatment, touching with the alkaline phenol or slight rubbing only is required. No sign of phenol poisoning has occurred. The treatment fails when the impervious dressing cannot be properly applied—for example, on the nose, or close to the eye. In these areas it must be supplemented by acid nitrate of mercury or another powerful caustic, or, perhaps, by ultraviolet rays. It does, however, prepare the way for these by reducing the number of nodules.

Etiology of Leukemia.—Woodman concludes from his analysis of twenty-five cases that leukemia is a condition which runs a course parallel in many striking respects with that of an acute or chronic infective process, and that while there are clearly some unexplained resemblances to tumor formation (particularly if myelomas and chloromas are included under the heading of leukemia), we must await further light on the whole problem of the etiology of tumors; this in turn will reveal the relation between the two conditions.

Foreign Body in Bladder.—In one of Thompson's patients a metal thermometer case, minus the lid and about 3 inches long, was removed from the bladder. Two plum stones were removed in a second case. Other articles removed were a collar stud, pieces of broken bougies and the end of a catheter.

Intestinal Obstruction in Infant.—In Wilson's case, a band-like adhesion due to intra-uterine peritonitis led to an operation for intestinal obstruction in a 3 day old infant. The obstruction was of the jejunum.

Lancet, London

1: 63-114 (Jan. 14) 1928

Education of Medical Officers for Service in Tro[illegible] . Balfour.—p. 63.
Medical Practice in England. S. Hastings.—
Hemangioma. J. J. M. Shaw.—p. 69.
Curative Action of Hydnocarpates and Iodi[illegible] ...eprosy. L. Rogers. —p. 73.
*Use of Tuberculin in Pulmonary Tuberculosis: Dreyer's Diaplyte. W. C. Bosanquet.—p. 74.
*Schick Test and Immunity to Diphtheria. R. Cruickshank.—p. 76.
*Mortality of Operations on Enlarged Prostate. H. Edwards.—p. 77.
Case of Cerebellar Glioma. A. G. Yates.—p. 78.
*Case Resembling Addison's Disease Treated with Pituitary Extract. E. C. B. Ibotson.—p. 79.
Case Presenting Clinical Picture of Congenital Heart Disease with Contrary Pathologic Findings. N. F. Pearson.—p. 79.
Treatment of Diphtheria Carriers. P. Bousfield.—p. 79.

Use of Tuberculin in Pulmonary Tuberculosis.—Bosanquet believes that tuberculin may sometimes be of use in: (1) patients who exhibit a persistent mild pyrexia in spite of continued rest in bed; (2) those who have no fever while resting, but suffer repeatedly from a slight return of pyrexia on rising and moving about, and (3) early cases showing slight laryngeal involvement. Prophylactic injections of tuberculin might also perhaps be given advantageously to delicate subjects with bad family histories. The initial dose which he employs, using Koch's tuberculin, is $\frac{1}{100.000}$ mg. of solid bacterial content, followed by $\frac{1}{75.000}$, $\frac{1}{50.000}$ mg., and so on in a febrile case, raising the dose more quickly in the absence of fever and in early cases. Dreyer's tuberculin is more concentrated, as the inert fatty matter has been removed and the solid material left is theoretically all active substance. Bosanquet uses an initial dose of $\frac{1}{200.000}$ mg., and this can be raised slowly or quickly in accordance with the type of patient. When a satisfactory dose has been reached, resulting in normal temperature and general improvement, it is best to repeat it, at all events for several ensuing injections, as it appears doubtful whether any advantage is gained by raising the dose indefinitely. The first trial injections may be given at intervals of five or seven days. Afterward, the intervals may be determined by the effects produced. Thus, when an injection causes a preliminary fall of temperature, which tends to rise again some days later, the time of such rise may indicate the need for another dose. After an injection, an immediate rise of temperature of more than 1 degree F. usually suggests a diminution of the dose given; in any case it contraindicates any increase. The patient should remain in bed, and so far as is possible at complete rest, during the first two or three months of the treatment, so that no avoidable disturbance may vitiate the strict observation and record of the results obtained.

Schick Test and Diphtheria Immunity.—The testing of nurses by the Schick method, and the active immunization of those found to be susceptible to diphtheria, has given satisfactory results, and has almost entirely eliminated the incidence of clinical diphtheria among the nursing staff of a large fever hospital in Glasgow.

Mortality of Prostate Operations.—The death rate in 126 cases of prostatectomy done by the Thomson-Walker method was 8.7 per cent. Four of these patients were operated on in two stages. One patient died, a mortality of 25 per cent. The remaining 122 patients were operated on in one sitting. The mortality in this group was only 8.2 per cent. There was only one death from hemorrhage among the whole series of 126 patients (less than 0.8 per cent). The mortality from operative shock was less than 0.8 per cent. In two cases of death due to pyelonephritis, the renal calices and pelves were dilated. In three of four cases in which uremia was the cause of death, sepsis played a part. Sepsis and uremia together account for 60 per cent of the deaths following the one-stage operation. Edwards feels that this relatively high mortality can be eliminated only by earlier operation. The practice of "cooking" a prostate until it is bad enough for operation is strongly condemned.

Use of Pituitary Extract in Addison's Disease.—For three years Ibotson's patient had suffered from profound asthma and severe vomiting. The skin was deeply pigmented everywhere; her face was a chocolate color; the hands were nearly black; the chest, back and abdomen were all a deep chocolate, and there was black pigment inside the mouth on the gums, cheeks and tongue. Ibotson concluded that she had Addison's disease. There was no anemia or wasting, and the urine was normal throughout. She was given whole pituitary gland, 2 grains (0.13 Gm.), night and morning, with the idea of raising the blood pressure. The patient became much stronger, the vomiting ceased but the pigmentation remained the same. She is still alive and keeping up and about.

Medical Journal of Australia, Sydney

2: 967-900 (Dec. 24) 1927

Hemorrhage of New-Born. W. L. Crowther.—p. 873.
Larva Migrans in Australia. G. R. Hamilton and E. W. Ferguson.—p. 875.
*Colossal Hydatid Cysts. L. E. Barnett.—p. 878.
Avitaminoses. G. C. Willcocks.—p. 882.

Colossal Hydatid Cysts.—Barnett relates the case of a man, aged 39, who, when 6 years of age, struck his abdomen against a projecting stone. He suffered great pain at the time and was acutely ill in bed for three weeks. From two to three years later, it was noticed that the abdomen had become a little swollen. This swelling slowly and steadily increased by almost imperceptible degrees, month by month and year by year. However, he felt well and was fit for his work, herding sheep. Finally his health failed rapidly. He suffered continuously from pain in the abdomen and loins; he became feverish, weak and obviously ill; he could no longer ride and soon could barely walk. His digestion was badly deranged; the urine was passed with difficulty and in small quantities at a time. The abdominal girth was 144 cm. Believing this to be a case of ascites, Barnett inserted a fine trocar in the left flank, but not a drop of fluid escaped. He then inserted a trocar of 2 mm. diameter and this time drew into the cannula unmistakable shreds of hydatid membrane. Laminated ectocyst, scolices and separate hooklets were all seen under the microscope. Routine laboratory investigations confirmed the diagnosis. The Casoni skin test yielded a positive response. The complement fixation was strongly positive. The eosinophil count was only 2 per cent. A laparotomy was performed. Eleven gallons of hydatid material was evacuated, not counting a considerable quantity of fluid from burst cysts which soaked into swabs and towels and coverings. Abdominal viscera could not be seen or felt; they were all matted and crowded into obscurity behind an enveloping screen of fibrosed peritoneum. The normal peritoneal cavity with its numerous folds and recesses was distended into a colossal sphere surrounded by a fibrocellular wall, 3 mm. in thickness and of a soft leathery consistency. Its interior surface was finely granular. The patient's weight before operation had been 238 pounds (110 Kg.); after operation it was 126 pounds (57.8 Kg.).

Tubercle, London

9: 157-204 (Jan.) 1928

Treatment of Chronic Pleural Conditions in Tuberculosis. J. Gravesen. —p. 157.
*Correlation of Calcium Metabolism, Parathyroid Function and Pulmonary Tuberculosis. P. Ellman.—p. 162.
After History of Sanatorium-Treated Patients. C. O. S. B. Brooke.—p. 167.

Calcium Metabolism, Parathyroid Function and Pulmonary Tuberculosis.—Nearly 100 estimations made by Ellman show that the calcium content of the blood in pulmonary tuberculosis is within normal limits (i. e., from 9 to 11 mg. per hundred cubic centimeter), but this calcium content can be raised from the minimum content to the maximum with corresponding improvement in the patient's general condition by calcium or parathyroid therapy.

Journal des Praticiens, Paris

41: 833-848 (Dec. 17) 1927

Premature Rupture of Membranes. H. Vermelin.—p. 833.
Abscess of Right Iliac Fossa Attributable to Pott's Disease. Delbet.—p. 837.
*Acute Hydrocephalus Developing After Mumps. A. Guérin.—p. 839.

Case of Acute Hydrocephalus Developing After Mumps.—At the age of 3 months Guérin's patient presented a bulging forehead, a fontanel larger than normal and a large head. At 6 months he contracted mumps. One month later, the Kernig sign appeared, with projectile vomiting and stubborn constipation. With treatment the child recovered, but relapsed and at the sixth month of the disease had a confirmed hydrocephalus. A febrile attack with a convulsion terminated life.

Paris Médical

63: 489-520 (Dec. 17) 1927

New Technic of Respiratory Gymnastics. P. Tissié.—p. 489.
Manual Examination of Subcutaneous Layer. Durey.—p. 498.
*Rôle of Physical Therapy in Treatment of Salpingo-Ovaritis. H. Dausset and A. Chenilleau.—p. 499.
*Physical Therapy of Sciatica. L. Gérard.—p. 505.
Attempted Classification of Phenomena of Photosensitization. L. Marceron.—p. 511.

Rôle of Physical Therapy in Treatment of Salpingo-Ovaritis.—Physical therapy of salpingo-ovaritis is valuable if instituted early. Dausset and Chenilleau were able to suppress all pain in 50 per cent of 600 patients treated and to fit them to return to an active life. Heliotherapy and irradiation with the arc lamp are treatments of choice in tuberculous salpingitis. Diathermy and hydrotherapy, combined with vaccines, induce speedy cure or, at least, improvement in cases of salpingitis which would otherwise necessitate long months of rest and an operation. Operation should be done only after from one to three months of physical therapy.

Physical Therapy of Sciatica.—Before treating sciatica the cause should be determined. If there is funiculitis or radiculitis, radiotherapy should be used. If there is myalgia, hydrotherapy is the method of choice. For neuralgia, the high frequency current or galvanization are effective. Gérard recommends general hydrotherapy and light baths for patients with chronic rheumatism.

Schweizerische medizinische Wochenschrift, Basel

57: 1161-1184 (Dec. 3) 1927

Puerperal Gas Gangrene. Guggisberg.—p. 1161.
History of Use of Squill. H. Scheer and H. E. Sigerist.—p. 1168.
Active Principle of Squill. A. Stoll.—p. 1169.
Pharmacology of Squill. E. Rothlin.—p. 1171.
*Roentgen-Ray Treatment of Tuberculous Adenitis. E. Wyss and A. Eghiayan.—p. 1172.
Work of Goiter Commission. O. Graemiger.—p. 1176.
Subcutaneous Neuromyo-Arterial Glomus and Its Tumors. J. L. Nicod.—p. 1177.

Roentgen-Ray Treatment of Tuberculous Adenitis.—Treatment of tuberculous glands requires from three to twelve months and must be given in several series. In general, the more recent the disease, the more speedy is the cure, without regard to the size of the tumor. Early puncture of caseous or suppurating glands may be combined with irradiation and good results may be obtained in from four to twelve months. In ulcerous, fistulous adenitis, roentgenotherapy can do much toward effecting a cure. Estimates of the length of treatment vary from two to fifteen months. With correct technic, the danger of roentgen-ray scars is negligible. For fibrous adenitis, roentgenotherapy does very little. In 1,311 cases taken from the records of the authors and from the literature, the percentages of cure ranged from 66 to 91. There were local recurrences in 8 or 9 per cent. Technic, indications and contraindications are other phases of this subject studied.

57: 1185-1208 (Dec. 10) 1927

Forensic Importance of Sequelae of Epidemic Encephalitis. R. Bing.—p. 1185.
*Roentgenologic Picture of Chronic Appendicitis. A. Fonio.—p. 1189.
*Traumatic Subcutaneous Rupture of the Intestine. W. Lauterburg.—p. 1200.
Scrofulous Diseases of the Eye. L. Steiner.—p. 1201.

Roentgenologic Picture of Chronic Appendicitis.—During several years Fonio has submitted all his patients with chronic appendicitis or with symptoms after earlier attacks of appendicitis to roentgenographic examination. The examination takes place twelve hours after ingestion of the contrast meal. In all these cases delayed emptying of the cecum and ascending colon was demonstrated. He suggests two explanations for the lessened motility of this part of the intestine: involvement of the serous coat of the intestine in the peritoneal inflammation and weblike adhesions around the cecum. The cecum is by nature predisposed to sluggishness.

Traumatic Subcutaneous Rupture of the Intestine.—Lauterburg reports a case of transverse rupture of the ileum 59 cm. above Bauhin's valve in a boy, aged 7. The injury was caused by a comparatively slight trauma, the child being thrown against the projecting edge of a wooden sled while sledding. Symptoms of peritonitis appeared after twenty-four hours. The child recovered after operation. In another case, rupture of the stem of the spleen followed a fall in which the upper abdomen struck against a log of wood. At operation, which took place more than twenty-four hours after the accident, a large hematoma was found. The child recovered.

57: 1233-1256 (Dec. 24) 1927

Dilation of Esophagus Under Guidance of Thread. M. E. Settelen.—p. 1233.
*Tuberculosis of Esophagus as Cause of Death. H. J. Schmid.—p. 1235.
Physical Chemistry in Study of Cancer. A. de Coulon.—p. 1236.

Tuberculosis of the Esophagus as Cause of Death.—The tuberculous ulcer in this case had its origin in a caseous mediastinal lymph gland which ruptured into the esophagus. Tuberculosis of the esophagus is rare, and it is still more rare, Schmid states, to find it in the center of the pathologic picture.

Policlinico, Rome

34: 1849-1888 (Dec. 19) 1927. Practical Section

Suppurative Meningitis in Tabes. G. Pilotti.—p. 1849.
*Vaginal Tampon. R. Carnelli.—p. 1853.

Quickly Prepared Vaginal Tampon.—For quick vaginal tamponade in cases of uterine hemorrhage in cancer, miscarriage and placenta praevia, Carnelli has used successfully for twenty years a piece cut off from a sterile gauze roll. Its length should be from 2½ to 3 inches to fit the vagina.

Riforma Medica, Naples

43: 1209-1232 (Dec. 19) 1927

*Antigens for Wassermann Test. G. Molinari.—p. 1210.
Large Abdominal Endothelioma. A. Jona.—p. 1212.

Phenol as a Substitute for Lipoids in the Spinal Fluid Wassermann Test.—In thirty-five cases of various spinal diseases, the phenol-alcohol antigen was tested against three lipoid antigens in making the Wassermann test. The results agreed absolutely. All (12) fluids positive with the lipoid antigens were also positive with the phenol-alcohol. The negative results were also identical.

Brasil-Medico, Rio de Janeiro

41: 1247-1280 (Nov. 26) 1927

*Blood Coagulation. V. Brasil.—p. 1247.
Unilateral Paralysis. A. Torres.—p. 1256.
Primary Diphtheric Conjunctivitis. T. Falcão.—p. 1259.

Blood Coagulation in Disease.—In some diseases, such as syphilis, pemphigus, leishmaniasis and cancer, the coagulating power of blood serum was found to be considerably decreased. Increased coagulating power was noted in typhoid and plague. In still other conditions, such as hookworm disease and malaria, there was little change. In leprosy, the results were indefinite. Of the various substances tested, glucose, neoarsphenamine and tartar emetic proved to be inert. Others, such as bismuth, manganese, sodium, tapioca and calcium chloride, raised the coagulating power. Iron, copper, lead and a weak solution of mercuric chloride decreased it. Sodium citrate and sodium oxalate act peculiarly, as they increase the coagulating power in vivo in the serum, but they lower it in vitro in the plasma.

Prensa Médica Argentina, Buenos Aires

14: 649-688 (Nov. 20) 1927

*Serum Therapy of Scarlet Fever. M. R. Castex and H. D. González.—p. 649.
*Ether Enemas. I. Ymaz.—p. 673.

Serum Therapy of Scarlet Fever.—From May, 1926, scarlet fever antiserum has been tried in Buenos Aires in 250 cases of scarlet fever of all types and conditions. In general, the result was excellent. In simple scarlet fever cases treated with serum, complications developed in only 4.7 per cent and the death rate did not exceed 5 per cent. The situation changes when other infections supervene. In cases associated with diphtheria, the mortality reached 65 per cent and in those with measles, 100 per cent. Bacteriologic examination disclosed 24 and 76 per cent of mannite fermenting and non-fermenting streptococci, respectively.

Ether Enemas as Sedatives.—In patients with severe colics, as, for instance, from gallstones, small oil-ether enemas prove useful. The dose is from 5 to 10 Gm. in twenty-four hours. The formula includes: ethyl ether, 5 Gm., olive oil, 60 Gm., laudanum, 10 drops. Proctitis developed in only one case.

Revista de Medicina y Cirugia de la Habana, Havana

32: 779-806 (Nov. 25) 1927

*Pulmonary Mycoses. N. Puente Duany, G. Aldereguía and J. García Alvarado.—p. 779.
Congenital Malformation of Heart. N. Puente Duany and R. Mathieu.—p. 797.

False Pulmonary Tuberculosis Caused by Mycosis.—Two cases of pulmonary mycosis were mistaken for cancer and tuberculosis, respectively. In one case a diagnostic pneumothorax was attempted. Then multiple abscesses occurred in the upper thorax and neck and the sections revealed typical actinomyces.

Semana Médica, Buenos Aires

34: 1553-1628 (Dec. 8) 1927

Facial Paralysis in the New-Born. J. M. Jorge and A. M. Centeno.—p. 1553.
Prevention of Measles by Use of Serum. A. Zubizarreta.—p. 1557.
*Aortic Aneurysm. J. R. Goyena and A. Dagnino.—p. 1560.
Ileus Caused by Gallstones. D. del Valle and R. E. Dónovan.—p. 1566.
Syphilis of Lung in Children. J. C. Navarro and E. A. Beretervide.—p. 1567. C'en.
*Combined Gastric and Duodenal Ulcer. P. Schlanger.—p. 1573.
Spontaneous Tuberculosis. J. Ferrán.—p. 1578.
Uterine Fibromyomas with Pregnancy. E. T. Lastra and J. Bazán.—p. 1583.
Infant Mortality at Rosario. P. P. Piñero García.—p. 1586.
Electric Tongue Depressor. C. Citrino.—p. 1612.
Use of Creosoted Air in Pneumothorax. Barralt.—p. 1614.

Bismuth in the Treatment of Aortic Aneurysm.—In a patient with a history of syphilitic infection and a positive Wassermann test, an aortic aneurysm developed. The condition advanced, in spite of various methods of treatment, including mercurials. The case seemed desperate when injections of metallic bismuth were started. Improvement was almost immediate. The aneurysmal shadow also decreased in size and the Wassermann test became negative.

Coexistence of Gastric and Duodenal Ulcers.—In three out of four cases of combined gastric and duodenal ulcer, the accuracy of the previous roentgen-ray diagnosis was confirmed at operation. The gastric lesion was invariably the smaller and apparently the more recent.

Archiv für Gynäkologie, Berlin

131: 171-424 (Nov. 22) 1927

*Blood Groups. H. Lützeler.—p. 171.
*Blood Groups and Paternity. H. Merkel.—p. 188.
Influence of Acetylene Anesthesia on Parenchymatous Organs. W. Schmitt and E. Letterer.—p. 203.
Injuries to Infant's Mouth in Self-Conducted Deliveries. E. Marz.—p. 234.
Persisting Deep Transverse Presentation. P. Schumacher.—p. 262.
Posterior Lobe of Pituitary in Pregnancy, Labor and Puerperium. H. Küstner and H. Biehle.—p. 274.
Phosphoric Acid in Serum of Pregnant Women. A. Bock.—p. 287.
Influence of Menstrual Cycle on Adnexal Inflammations. F. C. Geller and W. Sommer.—p. 293.
Cyclic Changes in Tubes. W. Butomo.—p. 306.
Fibroma Ovarii Adenocysticum. O. Frankl.—p. 325.
Cancer Metastases. M. I. Maljeff.—p. 339.
Position and Extent of Heart and Lung in Pregnancy and Puerperium. E. Klaften and J. Palugyay.—p. 347.
*Experimental Tuberculosis of Female Genital Organs. G. Bakács.—p. 364.
Hemoglobin Resistance in Gynecology and Obstetrics. E. Kittler.—p. 389.
"True" Endometritis. H. Hartmann.—p. 405.
Transformation Zone of Portio. H. Hinselmann.—p. 422.

Blood Groups and Disease.—Lützeler's researches on the blood of about 700 patients with arteriosclerosis, tuberculosis, syphilis or cholelithiasis did not indicate a particular predisposition of any blood group to any of these diseases.

Blood Group Determination and Paternity.—Merkel gives a table showing the possible and impossible blood groups of the child with the various combinations of blood groups in the parents, in accordance with Bernstein's schema. In most cases in which mother and child belong to the same group, no aid as to paternity can be obtained from study of the blood grouping; exceptions are when mother and child belong to group 0 (Janski I, Moss IV), in which case a man of group AB (Janski IV, Moss I), cannot be the father, and when mother and child belong to group AB, in which case a man of group 0 can be excluded.

Experimental Tuberculosis of Female Genital Organs.—From experiments on rabbits, Bakács concludes that primary, i. e., ascending, tuberculous infection of the female genital organs takes place by the lymph channels, if at all. Secondary (hematogenous) infection was not seen with intact or with mechanically or chemically injured uterus. Retrograde lymphogenous infection was shown to be possible.

Deutsche medizinische Wochenschrift, Berlin

53: 2107-2150 (Dec. 9) 1927. Partial Index

Female Sex Hormone. L. Fraenkel.—p. 2107.
*Prospects of Internal Treatment of Gallstones. W. Löwenberg, G. Noah and G. Scherk.—p. 2110.
Treatment of Diseases of Biliary Tract. A. Rothacker.—p. 2111.
*Gastric and Intestinal Hemorrhages from Thrombosis of Splenic and Portal Veins. W. Block.—p. 2112.
Osteotomy for Chondrodystrophic Deformities. H. Pick.—p. 2114.

53: 2193-2212 (Dec. 23) 1927. Partial Index

*Cure of Agranulocytic Angina by Roentgen Rays. U. Friedemann.—p. 2193.
*Intracutaneous Inoculation with Living Tubercle Bacilli. P. Wichmann.—p. 2195.
Causal Treatment of Chronic Rheumatism. G. Paul.—p. 2196.

Prospects of Internal Treatment of Gallstones.—One hundred and eighty-four patients were examined from two to seven years after the beginning of internal treatment for gallstones in Kuttner's clinic. Thirty-nine per cent were wholly or almost wholly symptom-free, 21 per cent had constant and severe symptoms, 40 per cent suffered pain occasionally but were in general satisfied with their condition. Of the uncured, 80 per cent had kept to a more or less strict diet, while 75 per cent of those free of symptoms had not held to a diet.

Gastric and Intestinal Hemorrhages from Thrombosis of Splenic and Portal Veins.—Block reports a case in which a woman died from hemorrhages from the stomach and intestines two and one-fourth years after successful removal of a huge thrombophlebitic tumor of the spleen. The cause of the hemorrhages was thrombosis of the splenic and portal veins. He believes that splenectomy can at most halt the progress of thrombophlebitic processes and that patients thus treated should be reexamined after a length of time.

Cure of Angina Agranulocytotica by Roentgen Rays.—Healing followed roentgen irradiation of the long bones in four cases of angina agranulocytotica reported by Friedemann. He thinks it probable that this disease is not an infection, but originates in endogenous disturbance, perhaps of endocrine nature.

Results of Intracutaneous Inoculation with Living Tubercle Bacilli of Diminished Virulence.—Sixty-three patients with tuberculosis of the skin, mucous membrane, lymph glands or lungs were inoculated subepidermally with 100,000 or 200,000 organisms. Up to twenty-four injections were given at intervals of eight days or longer. An infection of the lymph system was not seen. Any important influence as regards retrogression and absorption of tuberculous infiltrates was not observed, but in a number of cases the inoculations seemed to check the progress of the disease and to make it more amenable to local treatment. This favorable influence was very late in appearing.

Klinische Wochenschrift, Berlin

6: 2313-2360 (Dec. 3) 1927. Partial Index

Pathogenesis of Acidotic-Toxic Dehydration in Childhood. H. Seckel.—p. 2316.
Cure of Warts by Suggestion. B. Bloch.—p. 2320. C'cn.
Treatment of Cardiac Edema. C. Oehme.—p. 2325.
*Importance of Gas Metabolism Research in Tuberculosis. G. Giegler.—p. 2326.
Brain Antibodies in Syphilis. F. Georgi and O. Fischer.—p. 2328.
*Leukocytes in Pernicious Anemia, Especially in Blood Crises. I. Zadek.—p. 2330.
Blood Groups in Upper Hesse. H. Kliewe and R. Nagel.—p. 2332.
Treatment of Inoperable Tumors. H. Kahn and H. Wirth.—p. 2335.
Method of Action of Insulin Injections in Fattening Treatment and Apparent Habituation to Insulin. F. Depisch.—p. 2338.

Importance of Gas Metabolism Research for Tuberculosis.—From Giegler's clinical investigations he concludes that there is a relation between gas metabolism values and many of the early stages of pulmonary tuberculosis. In other stages there is considerable discrepancy. Gas metabolism is unimportant in diagnosis and prognosis of pulmonary tuberculosis.

Leukocytes in Pernicious Anemia, Especially in Blood Crises.—Zadek gathered data on 200 cases of pernicious anemia, which he followed after discharge. In general, leukopenia in this disease signifies a serious prognosis; increasing or physiologic values and hyperleukocytosis, on the other hand, with complications such as diarrhea, vomiting, pneumonia, etc., point to a favorable change of indefinite duration. Leukopenia in the height of the attack and in the recurrences proves the severe, toxic-degenerative alteration of the bone marrow, especially in the granulocyte system, while mounting counts for the leukocytes announce the efforts at regeneration of the blood-forming apparatus.

6: 2361-2408 (Dec. 10) 1927. Partial Index

Exciting Organism of Measles. R. Degkwitz.—p. 2364.
Lipoid Cell Spleno-Hepatomegaly of Niemann-Pick Type. B. Brahn and L. Pick.—p. 2367.
Diagnosis and Contents of Pancreatic Cysts. W. Deutsch and H. Grubel.—p. 2369.
*Fat-Poor Diet in Diabetes. D. Adlersberg and O. Porges.—p. 2371.
*Relations Between Vegetative Nervous System, Hypercholesteremia and Arteriosclerosis. F. Glaser.—p. 2377.
Ovarian Function in Menopause. H. Uiberall and E. Urbach.—p. 2379.
Colloid Shifting in Serum. W. Baer.—p. 2380.
Permeability of Varieties of Glass for Ultraviolet Rays. M. Zimmermann.—p. 2384.
Plantar Reflex in Infants. J. Schlesinger.—p. 2384.

Treatment of Diabetes with Fat-Poor Diet.—Adlersberg and Porges report another year's experience with their method. In the lighter forms of diabetes, the diet contains carbohydrate up to or beyond the limit of tolerance, the least possible fat, and protein to make up the required nourishment. In the severer forms, an abundance of carbohydrate, a moderate amount of protein and only so much fat as is necessary in the preparation of the food are given. The excretion of sugar is kept down by administration of insulin. In both classes of patients the weight is brought to normal by appropriate diet before the special diet is begun. The authors cite a number of cases to show that carbohydrate tolerance increases on the fat-poor diet. The increase, however, was found to have a definite limit and two cases proved refractory to treatment, possibly from nervous influences. The results of the regimen was that patients became able to take a diet of approximately physiologic composition. The acquired increase of tolerance was lost if the patients went back to a diet rich in fat and poor in carbohydrate and protein.

Relations Between Vegetative Nervous System, Hypercholesteremia and Arteriosclerosis.—Glaser demonstrated on eight subjects that in suitable persons excitation of the sympathetic by injections of epinephrine is followed by excess of cholesterol in the blood. This together with the facts that there is a disturbance of cholesterol metabolism in arteriosclerosis and that emotional disturbances play a rôle in the etiology of the latter lead him to place cholesteremia as a link in the chain between conditions of excitement in the vegetative nervous system and arteriosclerosis.

6: 2409-2456 (Dec. 17) 1927. Partial Index

Forssman's Antigen and Forssman's Antibody. W. Frei and S. Grünmandel.—p. 2412.
Physiology of Extrahepatic Bile Ducts. K. Westphal and W. Schöndube.—p. 2417.
Acetone Index in Diabetics. A. Abraham and M. Altmann.—p. 2419.
*Technic and Method of Blood Group Determination. H. Sachs.—p. 2422.
Brain Antibodies in Syphilis. F. Georgi and Ö. Fischer.—p. 2423.
*Calcium Ion Concentration in Pregnancy and Its Relation to Convulsions. O. Bokelmann and A. Bock.—p. 2427.
Chemical and Biologic Relations Between Thallium and Lead. A. Buschke and L. Berman.—p. 2428.
Fabism. L. Preti.—p. 2429.
Moisture Excretion Through Intestinal Tract in Nephritis. G. Scherk.—p. 2432.

Technic and Method of Blood Group Determination.—Sachs recommends the use of sheep's blood antigens in blood group determinations.

Calcium Ion Concentration in Pregnancy and Its Relation to Convulsions.—Bokelmann and Bock are convinced that the dialyzable calcium is greater in the blood stream supplying the fetus than in the maternal venous blood. The total calcium content, as well as the absolute value for dialyzable calcium in the blood serum of the umbilical vein, is considerably greater than in the serum of the arteries of the umbilical cord leading from the fetus.

6: 2457-2480 (Dec. 24) 1927. Partial Index

Tissue Metabolism in Organism Infected with Tuberculosis. W. Keller.—p. 2460.
Ideal Exposure in Roentgenologic Examination of Lungs. R. Klingenstein.—p. 2462.
Evaluation of Carbohydrate in Mammalian Organs. H. Handovsky.—p. 2464.
*Related Skin Reactions and Multisensitiveness in Asthmatic Patients. K. H. Baagöe.—p. 2466.
*Lymphogranuloma Inguinale with Acute Rheumatic Symptoms. A. Koppel.—p. 2469.
Carbonic Acid Content of Spinal Fluid in Circulatory Disturbances. A. Schürmeyer and H. Schwarz.—p. 2470.
Culture of Tubercle Bacilli. A. Jacobi.—p. 2472.

Related and Unrelated Skin Reactions in Patients with Asthma.—Eighty-eight asthmatic patients with positive skin reactions were tested with various substances. While some of the reactions might be regarded as related or group reactions, in other instances the materials used were of such widely different nature that a "multisensitiveness" of the patients must be assumed.

Lymphogranuloma Inguinale with Acute Rheumatic Symptoms.—Koppel describes three cases of lymphogranuloma inguinale in which the local phenomena were overshadowed by symptoms of a general nature. Erythema nodosum was present in all, episcleritis in two and symptoms of acute polyarthritis rheumatica in one.

Münchener medizinische Wochenschrift, Munich

74: 2085-2124 (Dec. 9) 1927. Partial Index

Pathogenesis of Peptic Ulcer. E. von Redwitz.—p. 2085.
*Ganglion Injection in Trigeminal Neuralgia. H. B. Hoppe.—p. 2089.
*What the General Practitioner Can Do to Prevent Crippling in Poliomyelitis. P. Pitzen.—p. 2092.
Infection of Gallbladder with Gas-Forming Bacilli. K. Wahlberg.—p. 2095.
Technic of Colposcopy. H. Hinselmann.—p. 2096.
Epidemiology: Reply to Bürger. F. Wolter.—p. 2097.
When Shall the Infant First Be Put to the Breast? F. Engelmann and F. Hamburger.—p. 2099.
Industrial Hygiene in Soviet Russia. A. Dworetzky.—p. 2100.
Fate of German Physicians. E. Liek.—p. 2103.

Ganglion Injection in Trigeminal Neuralgia.—Hoppe uses Härtel's method with 70 per cent alcohol, dose 0.5 cc. His material comprises 125 patients, including ambulant cases. He gives in tabular form the history of fifty-one patients, in thirty-three of whom a follow-up examination was possible. He can report eighteen permanent cures of more than twelve years, two of over nine years, one of over eight years, four of over six years, two of over five years, three of over four years, one of over three years. These patients all had total anesthesia when discharged. Of the eighteen patients discharged with partial anesthesia, two have remained free from attacks for five years, three were symptom-free till their death (from eight months to seven years).

What the General Practitioner Can Do to Prevent Crippling in Poliomyelitis.—During the fever period, the position of the patient should be such as to put at rest and relax the spinal cord, which is best obtained with the spine in lordosis. He places a plank across the bed under the mattress and inserts a small pillow under the lumbar region of the patient. A plaster shell is useful with restless children or if pain is severe. When

the fever has passed, the extent of the paralysis must first of all be determined. He advises against the electric current because it makes the children nervous, and uses the functional method. The complete examination can be made in five minutes. When the condition of the muscles is known, contractures can be avoided with certainty by correct position. The best preventive of scoliosis is the plaster bed. Contracture of the tensor fasciae latae, a sequela of disease of the gluteal muscles, can be avoided by overextension of the hips. He suggests a mattress in three parts, with the lower segment replaced by a wedge-shaped piece, the thin end at the foot of the bed. A sand-bag on the knee is used to obviate flexion contracture in the knee joint from paralysis of the quadriceps. With a tendency to pes eguinus, the patient should lie with the entire sole of the foot pressed against a box or stool placed at the foot of the bed. In paralysis of the deltoid, relaxation should be obtained by pillows inserted between the arm and the trunk. Pitzen gets the patients on their feet as quickly as possible, believing that the impulse of the will is more powerful to set the muscles to work than is the electric current. Children with quadriceps paralysis or with paralysis of several of the thigh muscles must not be allowed to walk without apparatus. If the hip muscles are injured, going about on all fours must be forbidden as it leads to the worst contractures.

74: 2125-2166 (Dec. 16) 1927. Partial Index

Relations Between Hormones and Vitamins. E. Vogt.—p. 2125.
Pituitary Preparations in Puerperium. H. Franken and O. Overhamm. —p. 2128.
Treatment of Paroxysmal Tachycardia. H. von Hoesslin.—p. 2130. C'td.
Photographic Representation of Sedimentation of Blood Cells. L. Litten. —p. 2133.
Mutation Through Roentgen Rays. F. Lenz.—p. 2135.
Hahnemann's Caustic. A. Zimmer.—p. 2137.
Technic of Infraroentgen-Ray Therapy. G. Bucky.—p. 2140.
Infection in Man with Bacterium Abortum of Bang. P. Bastai.—p. 2141.
*Management of Breast-Milk Collecting Stations. M. E. Kayser.—p. 2142.

Management of Breast-Milk Collecting Stations.—Sour breast milk was prepared in the same way as sour cow's milk used in infant feeding and it was equally well borne by the infants fed with it. The results of feeding 10 liters of milk made from powdered breast milk to two infants were quite satisfactory. The manufacturing process is at present very expensive. Kayser mentions a method for detecting adulteration of breast milk with cow's milk.

74: 2167-2206 (Dec. 23) 1927. Partial Index

Hemolytic Splenomegaly. A. Adler.—p. 2167.
*Therapeutic Use of Cathode Rays. W. Baensch and R. Finsterbusch.—p. 2171.
Use of Bürker's Hemoglobinometer. G. Katsch and E. Metz.—p. 2174.
*Protective Inoculation Against Typhoid. Hilgermann.—p. 2175.
*Combating Injuries from Anesthetics. H. Bremer.—p. 2177.
Unusual Beginning in Multiple Sclerosis. W. Mayer.—p. 2178.
Goiter Problem. Grassl.—p. 2179.
Defective Regulation of Circulation on Certain Movements and After Hemorrhages. E. Hönck.—p. 2180.
Traumatic Appendicitis. F. Brüning.—p. 2180.
Treatment of Paroxysmal Tachycardia. H. von Hösslin.—p. 2181. C'cn.

Therapeutic Use of Cathode Rays.—Baensch and Finsterbusch report success in the treatment of lupus, tuberculosis verrucosa cutis, psoriasis (not too extensive), infected superficial wounds, and cancroids by the application of cathode rays. He used 95 kilovolts, 3 milliamperes, at 5 centimeters' distance; the length of the irradiation varied from fifteen seconds to two minutes. He warns that the method is not without danger, both to the operator and to the patient, in the present stage of our knowledge. The reactions must be allowed to disappear entirely before a repetition of the treatment is given. His cures are not more than 6 months old, hence he cannot speak as to permanence.

Protective Typhoid Inoculation.—Hilgermann pleads for very small doses (dilution of the usual material 1:100,000 or 1:1,000,000). Individualization is necessary. Massive doses may have the effect of lowering rather than raising the resistance of the organism. By using very small doses the dangers of protective inoculation during an epidemic are avoided. The idea that a general or a visible local reaction ought to follow every inoculation is erroneous.

Combating Injurious Effects from Anesthetics.—A preparation of charcoal, used in a specially prepared oxygen mask, has been found useful by Bremer in keeping the air of the operating room pure by absorbing the anesthetic exhaled by the patient. Another charcoal preparation, ingested by the patient before operation, was successful in obviating the after-effects of the anesthetic on the patient.

Wiener klinische Wochenschrift, Vienna

40: 1501-1532 (Dec. 1) 1927. Partial Index

Exophthalmic Goiter. H. Haberer.—p. 1501.
Reticulo-Endothelial System and Chemotherapy. J. L. Kritschewski.—p. 1504.
Organic Amnesia and Hypnosis: Studies of Patients with Korsakoff's Syndrome. H. Hartmann.—p. 1507.
*Admissibility of Preventive Injection Against Tuberculosis According to Calmette. R. Kraus.—p. 1508.
Lipoid Soluble Bismuth in Treatment of Congenital Syphilis. E. Tüdös. —p. 1510.
Exchange Relations Between Labyrinth and Vegetative Nervous System. T. D. Démétriades.—p. 1514.
*Treatment of Pernicious and Severe Anemias. R. Hift.—p. 1517.
Acute Anterior Poliomyelitis. J. Zappert.—p. 1517.
Treatment of Gonorrhea in the Male. A. Perutz. Supplement.—pp. 1-12.

Admissibility of Preventive Injection Against Tuberculosis According to Calmette.—The B C G strain possesses, according to Kraus' work, a certain virulence for experimental animals. It has the power when administered peritoneally or intravenously to provoke tuberculous changes in the organs after three or four weeks. This does not hold true for subcutaneous or gastric administration. The process is benign and does not become generalized. This strain is a vaccine in Pasteur's acceptation of the term.

Treatment of Pernicious and Severe Anemias.—In 1918 Hift published an article in this journal in which he advocated the use of liver in the diet of cases of alimentary hemeralopia and in scurvy. In 1917 he recommended it in hemorrhagic diseases of the pericardium. He, therefore, claims priority in modern literature.

40: 1533-1564 (Dec. 8) 1927. Partial Index

Skin and Venereal Diseases in the Clinic. W. Kerl.—p. 1533.
Microscopic Researches on Capillaries of Human Conjunctiva. D. Scherf and J. Urbanek.—p. 1538.
*Influence of Sodium Nitrite on Circulation. F. Gaisböck and A. Jarisch. —p. 1540.
*Subcutaneous Inoculation with Smallpox Vaccine. W. Knoepfelmacher. —p. 1541.
Chemical Composition of Besredka's Bacterial Culture Filtrates. E. Epstein and K. Lorenz.—p. 1542.
Reciprocal Relations Between Labyrinth and Vegetative Nervous System. T. D. Démétriades.—p. 1544. C'cn.
Treatment of Tetanus in Haberer's Clinic. M. Tschebull.—p. 1546.
Epidemic Encephalitis (Lethargic). J. Zappert.—p. 1547.

Influence of Sodium Nitrite on the Circulation.—Gaisböck and Jarisch found that in healthy human beings the minute volume of the heart increased after administration of therapeutic doses of sodium nitrite. The blood pressure and pulse frequency were unchanged.

Subcutaneous Inoculation with Smallpox Vaccine.—In two infants, 1 cc. of smallpox vaccine (1:1,000) was injected subcutaneously. Revaccination after two and three years, respectively, resulted in typical inoculation scars. In three other infants similar subcutaneous inoculations were made, but in these cases the dilution was 1:100. They reacted with a characteristic infiltrate. Four years later they proved immune to cutaneous inoculation. In a sixth child the dilution of the subcutaneously injected vaccine was 1:200 (the dose being still 1 cc.). Five years later this child was immune to cutaneous vaccination.

40: 1597-1628 (Dec. 22) 1927. Partial Index

Pathology of Cerebrospinal Fluid. F. Plaut.—p. 1597.
Experimental Lengthening of Period of Gestation in Rabbits. H. Knaus. —p. 1600.
*Wrong Diagnoses. H. Maendl and E. Waltuch.—p. 1601.
Carbon Monoxide Poisoning in Coal Mines. B. Weissberger.—p. 1604.
Chemotherapy and Electrotherapy. R. Eisenmenger.—p. 1607.

Fourteen Wrong Diagnoses in Diseases of the Lungs, Bones or Joints.—In this series syphilis, carcinoma metastasis and heart lesions were mistaken for tuberculosis. One patient had been treated for seven years for fungus of both knee joints. For years he had been confined to bed. The disease was gonorrheal gonitis and under treatment with milk injections, etc., he has become entirely able to work. In another

case skin tuberculids over the lumbar spine were diagnosed as spondylitis. Maendl and Waltuch warn especially against mistaking burrowing abscess proceeding from spinal caries for appendicitis or adnexial tumor. Wide opening of the abscess in these cases leads to mixed infection from without, usually with fatal results.

Zeitschrift f. Geburtshülfe u. Gynäkologie, Stuttgart

92: 257-472 (Nov. 29) 1927

Prolapse of Mucous Membrane at Os Uteri. H. Hinselmann.—p. 257.
Malignant Chorionepithelioma. R. Meyer.—p. 259.
*Radiotherapy of Vaginal Carcinoma. B. Bienenfeld.—p. 326.
*Primary Carcinoma of Vagina. E. Goldberger.—p. 338.
Uterine Metastasis of Primary Ovarian Carcinoma. H. O. Neumann.—p. 350.
Fate of Premature Infants. G. Keller.—p. 379.
Replacing Chloroform Narcosis by Brief Ether Narcosis in Threatened Intra-Uterine Asphyxia. P. Schumacher.—p. 417.
*Blood Examinations in Extra-Uterine Pregnancy. M. Krüger-Franke, W. W. Haagen and G. Ockel.—p. 428.
Genesis of Hematosalpinx. E. Terruhn.—p. 432.

Radiotherapy of Vaginal Carcinoma.—Bienenfeld reports a one and one-half year cure, by combined roentgen-ray and radium treatment, in a case of primary tumor of the vagina in a woman, aged 32. The tumor was histologically demonstrated to be a solid plexiform carcinoma of low maturity. It was in an advanced stage. She reviews the literature.

Primary Carcinoma of the Vagina.—In eight years Goldberger saw thirty-seven cases. In the same period there were 1,097 carcinomas of the cervix and eighty-three of the body of the uterus. Thirty per cent of the patients with vaginal carcinoma were in the fourth or fifth decade of life. The average number of births was 2.6, eleven patients had borne no children. In four cases there had been previous mechanical insults or perhaps constitutional changes. The seat of the tumor was the posterior wall twenty-one times; the anterior wall, seven times; the lateral wall, five times; in four cases the growth of the tumor was annular. The typical picture of squamous cell epithelioma appeared on histologic examination in nearly all the cases. The initial symptoms are even more trivial than those of carcinoma of the cervix. He reports two cures: one of four and one-half years in a woman, aged 39, after radical operation according to Wertheim; the other in a woman, aged 38, with primary squamous cell epithelioma of the vagina and diffuse Paget cancer of the vulva, after radical operation followed by roentgen irradiation. This patient remained well for two years, until she died of an intercurrent disease.

Diagnostic Value of Blood Examinations in Extra-Uterine Pregnancy.—Krüger-Franke et al. found that Schiller's hemogram, the blood sedimentation test and determination of hemoglobin were rarely of practical value in the differential diagnosis of extra-uterine pregnancy. In deciding between appendicitis or peritonitis and extra-uterine pregnancy, a very slight shifting to the left would exclude the first two, a very high polychromasia would speak for the loss of a large amount of blood. The anamnesis, the clinical picture, above all the typical appearance of the patient remain the most important factors.

Zeitschrift für Urologische Chirurgie, Berlin

23: 339-478 (Dec. 15) 1927

*Paranephritic Abscess. R. Chwalla.—p. 339.
Malformations of Urinary Organs. F. H. Kreuzbauer.—p. 365.
Plastic Operations for Hydronephrosis. A. S. Maximovitsch.—p. 383.
Diseases of Ureter. J. Gottlieb.—p. 390.
Fibrosarcoma of Spermatic Cord. R. Chwalla.—p. 419.
Kidney Carbuncle. A. W. Smirnow.—p. 425.
Foreign Bodies in Bladder. E. P. Wolff.—p. 428.
Tuberculosis of One Kidney and Toxic Nephritis of the Other. O. Orth.—p. 435.
Treatment of Prostatic Hypertrophy with Intra-Urethral Electrocoagulation. R. Oppenheimer.—p. 443.
Chronic Urethritis in Man. E. Brack.—p. 452.
Paravertebral Anesthesia in Urology. H. Widenhorn.—p. 460.

Paranephritic Abscess.—Paranephritic abscess is defined as an acute suppurative inflammation of the fatty renal capsule or of the renal fascia. Infection takes place either through an embolic metastatic process or by extension from the kidney or neighboring organs. Most authors believe that it originates in a metastatic abscess of the cortex of an otherwise normal kidney. These abscesses can perforate into the loose pararenal tissue, or infection can take place through the lymph channels. The staphylococcus is the organism found most frequently. Trauma plays a part in a number of the cases, probably by producing a hematoma in the fatty tissue with subsequent infection. It is difficult to determine whether the kidney is involved in the paranephritic process. The diagnostic importance of a recent staphylococcus infection, such as furuncle, carbuncle, felon or sore throat is emphasized. Frequently, no etiologic factors can be elicited. This was the case in two thirds of the author's cases. Urinalysis does not help very materially in determining concomitant kidney involvement. Normal urine suggests primary metastatic paranephritis, a markedly pathologic urine is suggestive of renal abscess. However, all urinary conditions, including aneuria of the involved side, may be secondarily induced by a paranephritic abscess without the participation of the kidney itself. Chwalla considers exploratory puncture permissible. The most important disease from a differential diagnostic standpoint is suppurative retrocecal appendicitis. The author is opposed to the more radical methods, with exposure and even removal of the kidney itself. In his thirty-two patients, thirty recovered after simple incision and drainage.

Acta Chirurgica Scandinavica, Stockholm

62: 399-598 (Dec. 24) 1927

Idiopathic Hepatic Abscesses and Air Embolism of Hepatic Vessels. F. Langenskiöld.—p. 399.
Perforating Gastric Ulcer and Pyloric Stenosis in Thirteen Year Old Children. J. Nordentoft.—p. 426.
Coxa Plana, Acute Coxitis and Ligamentum Teres. J. Elgart.—p. 454.
Primary Cancer in Jejunum and Ileum. J. Hellström.—p. 465. In English.
*Rôle of Cholesterol in Formation of Gallstones. S. Hansen.—p. 483.

Rôle of Cholesterol in Formation of Gallstones.—The greatest number of gallstones in man consist mainly of cholesterol; recently formed stones are made up almost entirely of that substance. The cause of gallstone formation should be sought in an abnormal composition of the bile and not in any local conditions of the bile tracts. Experiments in vitro and in vivo have shown that cholesterol is precipitated from the bile, and that infection plays no part in the process. By increasing the quantity of cholesterol in the blood of rabbits through feeding them on cholesterol and in other ways, the cholesterol content in the bile is increased, and in such animals cholesterol is precipitated in the gallbladder partly as isolated crystals, partly as crystals clumped together in a way never found in normal animals. Narrowing the cystic duct or the gallbladder in rabbits with cholesteremia, results almost constantly in formation of cholesterol concretions, while the same operation in normal animals may cause pigment, but not cholesterol, to be precipitated. Typical mixed gallstones were never obtained. In patients suffering from gallstones, one often finds a cholesteremia, which may reasonably be attributed to impairment in the function of the suprarenals or ovaries.

Ugeskrift for Læger, Copenhagen

89: 1167-1192 (Dec. 15) 1927

*Cutaneous Reactions in Hay-Fever. K. H. Baagøe.—p. 1167.
*Antigenic Action of Various Kinds of Pollen. O. Thomsen and K. Baagøe.—p. 1171.

Investigations on Cutaneous Reactions in Hay-Fever.—Tests of the cutaneous reaction to pollen from various Danish plants were made by Baagøe in twenty cases of hay-fever and thirty of asthma associated with cutaneous hypersensitiveness to pollen. The pollen of meadow grasses and of rye caused the most frequent and marked reactions in both groups, positive reactions appearing in all the hay-fever cases. A pronounced reaction, i. e., a cutaneous papule at least 20 mm. wide, was seen in sixteen and is regarded as pathognomonic for hay-fever. A negative cutaneous reaction to pollen, he says, rules out hay-fever.

Experimental Investigation on Antigenic Action of Various Kinds of Pollen.—Thomsen and Baagøe demonstrated in animals that immunization with pollen can cause a marked production of antibodies without resulting hypersensitiveness in the actively immunized organism or in a healthy organism passively treated with immunizing serum.